

# Annual Report 2015-16



# BHEL - Making in India

*...since 1964*

## Power

Power Generation plants including Thermal (up to 1000 MW), Nuclear, Hydro & Gas

BoP & Auxiliary systems, Pollution control eqpt. (ESP, FGD)

## Industry

Electrical & Mechanical systems (Compressors, Pumps, Motors, etc.), Control & Automation systems for Fertilizer, Paper, Refining, Steel & Sugar industries

## Transmission

HVAC/HVDC systems, GIS, AIS, Substation Automation, FACTS Solutions, Transmission products up to 1200 kV

## Water

Water Management System







## Defence & Aerospace

SRGM,  
Turret Casting T72 Tank,  
IPMS, ACS



## Oil & Gas

Oil Rigs & controls,  
Well Heads &  
Xmas Tree valves,  
Compressors



## Transportation

Transportation systems,  
Locomotives, Propulsion  
systems & Electrics

## Renewable energy

Solar PV Power plants/  
Space-grade PV Panels  
& Batteries





# Clean Coal... Green Coal...

## **Boiler**

- Supercritical technology - high efficiency, low emission;
- Developing Advanced Ultra Supercritical technology - Plant efficiency to improve by 10%+
- Design customized to Indian conditions - capable to operate with wide range of fuels at different loads
- State of the art design to achieve low NO<sub>x</sub> levels

## **Turbine**

- Efficiency levels at par with global performance levels
- Designed to minimize noise levels meeting stringent environment norms

## **Generator**

- Efficiency levels (~99%) best in class

## **Auxiliaries (Pumps, Fans, Motors)**

- Efficient design & optimized system solutions to minimize power consumption within power station

## **Electro Static Precipitator (ESP)**

- Designed to maximise reduction (~99.95%) in particulate matter even for high ash Indian coal

## **Flue Gas Desulphurization (FGD)**

- Offering solutions to reduce SO<sub>x</sub> levels (~95%) to meet stringent environmental norms

## **Electrical Equipment (Transformers, Reactors, etc.)**

- Optimized design to minimize electrical losses in the system

## **Water Treatment Plant**

- Solutions for zero-liquid discharge



# Contents

4

## Annual Review

- 4 Letter to Shareholders
- 7 Leadership at BHEL
- 12 Year at a Glance

14

## Corporate Profile

- 14 About BHEL
- 18 World of BHEL
- 20 Recognition of Excellence

23

## Directors' Report

- 31 Management Discussion & Analysis
- 32 Business Profile**  
*(Profile and Performance of Business Segments)*
- 55 Financial Performance
- 71 Sustainable Development**
- 83 Business Responsibility Report
- 88 Innovation**  
*(R&D and Technological Achievements)*
- 93 Corporate Governance

148

## Financial Statements

- 149 Financial Statements Standalone
- 196 Consolidated Financial Statements

237

## Additional Information

- 238 Ten Years Financials
- 240 Value Addition Statement
- 241 Performance Annual Plan
- 241 Contribution to Exchequer
- 242 BHEL in India
- 243 Product Profile
- 252 Glossary

253

## Notice



# Letter to Shareholders



*Dear Shareholders,*

It is an honour and a privilege to present the 52<sup>nd</sup> Annual Report of your company. I am extremely humbled as I write my first letter to our valued shareholders, after assuming office on January 1, 2016. This has been a very challenging year for your company. The volatility in economic and business environment is bound to change the way we operate and create wealth for our shareholders. Holding on to our strengths and building new ones, our team of 42,000 employees is resolutely focused on achieving immediate target of regaining growth.

## The Year That Was...

Today, your company is in the midst of the toughest times it has faced since its inception. The uncertain global economic order, caused by weak global recovery, slowing global trade and China's growth transition, is the 'new normal'. The desired pace of growth continues to elude the domestic industrial sector as it faces continued pressure from subdued capex and capacity underutilization. Power generation equipment industry, in particular, has been facing a tough time for the last

*“ Holding on to our strengths and building new ones, our team of 42,000 employees is resolutely focused on achieving immediate target of regaining growth... ”*

few years, accentuated by the ongoing energy transition. In addition to this, geopolitical disturbances in the target export markets and fluctuating energy prices have dampened the international business. The overall subdued business environment due to these factors and the current business mix affected the financial performance of the company, with the company registering a turnover of ₹ 26,587 Crore and a net loss of ₹ 913 Crore during the year.

***But, the real strength of an organization lies in discovering the opportunities in its challenges.*** This is what we believe in, and despite the hurdles, we have

achieved some outstanding benchmarks in the year 2015-16 which reflect your company's strong fundamentals:

- An unprecedented feat in the execution of projects was achieved by commissioning/synchronizing an all-time high 15,059 MW of power generation equipment. This includes commissioning of six supercritical sets which constitutes 55% of the supercritical sets commissioned in the country during the year.
- Like in 2014-15, all the hydroelectric power projects that went on stream in the country, totalling 810 MW, were commissioned by BHEL.
- Your company booked orders worth ₹ 43,727 Crore - the highest in the last five years with 42% growth over 2014-15. With this, the company has orders worth ₹ 1,10,730 Crores for execution in 2016-17 and beyond.
- Your company secured three major orders of 765kV substations under stiff international competitive bidding for the National Green Energy Corridor project.
- 500 MW Kosti TPS - Sudan's largest thermal power plant, and two 220 kV substations in Afghanistan were successfully commissioned by BHEL.

*“...unprecedented feat in the execution of projects was achieved by commissioning/synchronizing an all-time high 15,059 MW...”*

We are proud of our achievements but are fully aware of the looming challenges. The company is addressing them with its persistent efforts and capitalizing on the new opportunities. As an organization, we cannot influence most of the external factors but can definitely change what is going on within us. It is time for your company to embrace the new and adapt to the market realities.

### Creating BHEL of Tomorrow

In our journey of creating BHEL of tomorrow, it is our passionate endeavour to transform BHEL into an organization which is “**Responsive, Robust and Rising**” to the needs of its stakeholders. This involves orienting our strategy towards enhancing responsiveness by delayering and being simple; building new sources of strength for a robust future and diversification to attain a balanced portfolio for creating a rising organization. Your company's efforts are concentrated towards this drive and I firmly believe that this will be the bedrock of our growth in the coming years.

### Responsive BHEL!

*“...to create a more agile organization, we are focusing on Execution, Consolidation and Simplification...”*

What we choose to embrace, to be responsive of, is a reflection of our intent. With a view to create a more agile organization, we are focusing on **Execution, Consolidation and Simplification** (ECS) as the first step. In this process, we are identifying the weak links and putting in place an organization structure that is more productive and that enables us to achieve higher operational efficiency. At the same time, we are reviewing our systems and processes to get rid of the cumbersome legacies and move towards simplification by eliminating waste and low value added activities. Accelerated execution is one of the most important facets for us to be responsive to customer's needs. Our continual efforts in this direction have resulted in commissioning /synchronization of more than 10,000 MW of power projects for the fourth consecutive year, with this year crossing an all-time high mark of 15,000 MW. This includes the highest-ever power generation capacity addition of 13,061 MW to the Indian utility segment - 23% higher than the target of Ministry of Power, Government of India and a quantum jump of 59% over the previous year.

### Robust BHEL!

Your company is looking forward to build new strengths on the rock-solid foundation which we have built in our journey of over half of a century. We derive this strength from our deep-rooted focus on research & development. Standing true to the spirit of innovation-led growth strategy, the company has maintained R&D expenditure at plus 2.5% of the turnover for more than five years in a row. The company has strengthened its focus on indigenization of supercritical technology to enhance its competitiveness. Recent in-house developments include 765 kV & 1200 kV UHVAC transformer & reactor, IGBT propulsion technology for locomotives and ACEMU, STATCOM for industrial & grid applications, Phase Shifting Transformer and 500 kW PCU for solar PV generation. BHEL also made its foray into 400 kV GIS by securing the first commercial order.

*“...derive this strength from our deep-rooted focus on research & development...organization structure to embrace IT as a strategic tool... focus on...people development...”*

As digital tools and technologies are profoundly differentiating the way business is being conducted, your company has put in place an organization structure to embrace IT as a strategic tool for opening up new stream of opportunities in new as well as traditional business areas.

Most importantly, to fulfil this target of a robust organization, we have unhindered focus on the people development strategy which is today driven by the growing aspirations of the millennial generation of the company. We are embracing social technologies for increasing employee engagement and working towards development of employee competencies in line with the business plans through implementation of various learning & development initiatives.

### *Rising BHEL!*

What will define us in the new phase of our journey is how well we rise to the impending challenges. Our goal is to create an organization which will convert problems into possibilities and leverage on the new opportunities emerging from 'Make in India'. Thus, our absolute focus is on creating a balanced portfolio with focus on industry business. Towards this, we are taking various steps. To harness the opportunities emerging from Government's focus on renewables, BHEL is in the process of augmenting its manufacturing capacity and enhancing EPC capability for large scale PV based plants. Company is also working towards expansion of its defence portfolio which currently includes Super Rapid Gun Mount & Integrated Platform Management System for naval ships, thermo pressed components, compact heat exchanger for Tejas, turret castings for T72 tanks and other strategic equipment. We continue to strengthen our transmission portfolio. Considerable progress has been achieved in the execution of the world's largest  $\pm 800\text{kV}$ , 6000MW HVDC NE-Agra project with commissioning of Pole-1 and establishment of power flow in both directions.

*“...goal is to create an organization which will convert problems into possibilities and leverage on the new opportunities emerging from 'Make in India'...”*

With focus on the industry, company is equally pivoted to maintain its leadership in the power sector. In order to ensure energy security, coal will continue to remain the dominant fuel for power generation in the foreseeable future in view of its abundant domestic reserves and affordability. Towards this, we have focussed on enlarging scope of offer and enhancing competitiveness by adding flue-gas desulfurization system, air-cooled condenser,

water management system and are in the process of expanding offerings for environmental solutions.

### **Partners in Our Journey**

These are challenging times, but I am sure that our best years lie ahead. BHEL has the '**strategy, structure, and staff**' to ensure that, in both good times and tough, we make steady progress. We will not leave any stone unturned in our quest to unlock the potential and take your company to greater heights. We will continue to put unwavering emphasis on creating customer value and bolster our inherent strengths to enhance shareholder value.

*“...BHEL has the 'strategy, structure, and staff' to ensure that, in both good and tough times, we make steady progress...”*

Finally, I would like to express my sincere gratitude to all our stakeholders: business partners including customers and vendors for reposing their faith in us, employees for their persistent commitment, members of the Board for their wisdom, members of the Management Committee for efficiently channelizing the company's resources, and you, our shareholders, for evincing trust in our ability to steer forward BHEL in these challenging times. Various ministries of Government of India, particularly the Department of Heavy Industry, have been providing valuable guidance and support in our efforts. I am confident that we will continue to receive your support in the future.

I see a challenging, yet exciting, journey ahead for us -one of new beginnings, new opportunities and new horizons.

*With best wishes,*



**Atul Sobti**  
Chairman & Managing Director

New Delhi  
August 10, 2016



# Leadership at BHEL

Board of Directors  
(As on 10.08.2016)



*Sitting from right to left*

Shri Keshav N. Desiraju, Part-time Non-official Director

Shri Rajesh Kumar Singh, Joint Secretary, DHI

Shri Atul Sobti, Chairman & Managing Director

Dr. Subhash Chandra Pandey, Additional Secretary & Financial Adviser, DIPP

Shri A.N. Roy, Part-time Non-official Director

*Standing from right to left*

Shri S. Biswas, Director (Engineering, R&D)

Ms. Harinder Hira, Part-time Non-official Director

Shri T. Chockalingam, Director (Finance)

Shri R. Swaminathan, Part-time Non-official Director

Shri Rajesh Kishore, Part-time Non-official Director

Shri D. Bandyopadhyay, Director (Human Resources)

Shri Akhil Joshi, Director (Power)

Shri Amitabh Mathur, Director (Industrial Systems & Products)

Shri I.P. Singh, Company Secretary

# Leadership at BHEL

## Management Committee (As on 10.08.2016)



**Atul Sobti**  
CMD



**D. Bandyopadhyay**  
Director (Human Resources)



**Amitabh Mathur**  
Director (Industrial Systems & Products)



**S. Biswas**  
Director (Engineering, R&D)



**T. Chockalingam**  
Director (Finance)



**Akhil Joshi**  
Director (Power)



**S. Gopinath**  
ED (Tiruchirappalli, PPPU & Piping Centre)



**Prakash Chand**  
ED (HEEP), Haridwar



**Rajeev Srivastava**  
ED (PS-SSBG), Noida



**S.N. Maiti**  
ED (PS-WR), Nagpur



**M.K. Sharma**  
ED (CPP, PMG & Contract Closing), New Delhi



**S. Raj Sabapathy**  
ED (CBU), Bengaluru



**A.M.V. Yugandhar**  
ED (HEP), Bhopal



**Rajiv Garg**  
ED (CDT), Noida



**R.K. Tiwari**  
ED (EDN), Bengaluru



**N.R. Edkie**  
ED (CFFP), Haridwar



**V.K. Chohan**  
ED (IO), New Delhi



**Dr. Umakant Choudhury**  
ED (CTM), New Delhi



**K. Mysiah**  
ED (BAP), Ranipet



**Sandeep Narang**  
ED (PE&SD), Hyderabad



**K. Purswani**  
ED (COM), New Delhi





**Sudhanshu Pathak**  
ED (Coordination), New Delhi



**D.K. Singh**  
GM-I (PCSG), Noida



**J. Govindaswamy**  
GM-I (HPVP), Visakhapatnam



**J.C. Sharma**  
GM-I (PS-PEM), Noida



**D. Guin**  
GM-I (CSM), New Delhi



**Gururaj S. Rotti**  
GM-I (REWB), New Delhi



**D.K. Thakur**  
GM-I (HPEP), Hyderabad



**D.K. Dikshit**  
GM-I (TP), Jhansi



**G.K. Hedao**  
GM-I (PS-MKTG), New Delhi



**Narendra Kumar**  
GM-I (HBG), Noida



**S. Vaidyanathan**  
GM-I (Corp. Finance), New Delhi



**Praveen Bansal**  
GM-I (TBSP), New Delhi



**Rajeev Chawla**  
GM-I (PS-NR), Noida



**K.R. Bhardwaj**  
GM-I (PS-PMG), New Delhi



**Anjan Mukhopadhyay**  
GM-I (PS-ER), Kolkata



**S.S. Wadhawan**  
GM-I (CQ & BE), Noida



**A.K. Mukhopadhyay**  
GM-I (PS-SR), Chennai



**P.P. Yadav**  
GM-I (NBG), Noida



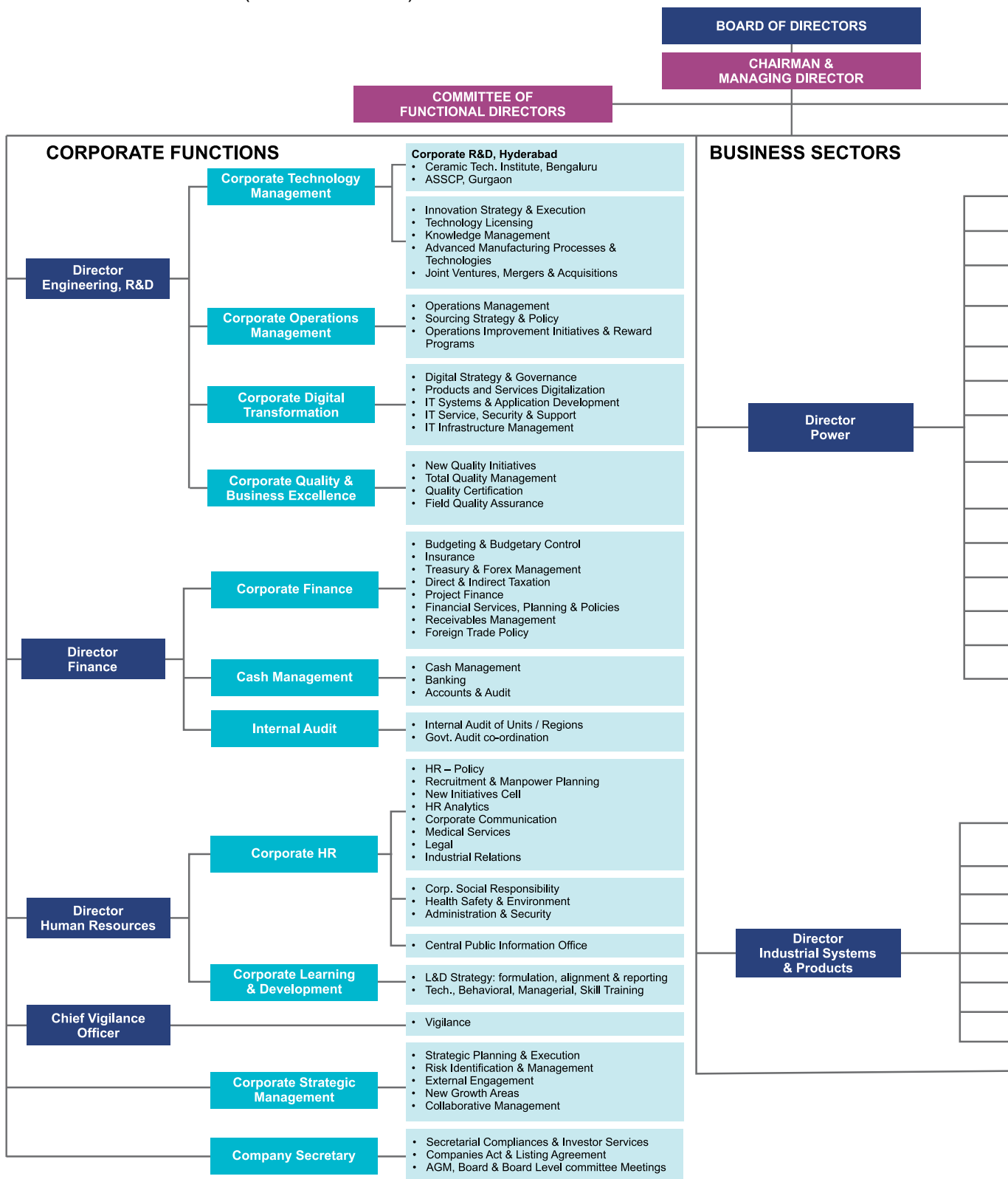
**Anil Kapoor**  
GM-I (HR & CC), New Delhi



**T.S. Murali**  
GM (CSM), New Delhi  
Secretary-Management Committee

# Leadership at BHEL

## Corporate Organisational Structure (As on 10.08.2016)





## MANAGEMENT COMMITTEE

## OPERATIONS

- PS – Marketing (Thermal & Gas)
- Nuclear Business Group
- Hydro Business Group
- Project Management Group
- Contract Closing Group
- Technical Services
- Project Closure Synergy Group
- Project Engineering Management
- Spares & Services Business Group
- Heavy Equipment Repair Plant, Varanasi
- R&M Systems Group, Bhopal
- Industrial Systems Group, Bengaluru
- PS Southern Region, Chennai
- PS Northern Region, Noida
- PS Eastern Region, Kolkata
- PS Western Region, Nagpur
- PS – HQ, MSX, HR

- Captive Power Plant Business
- Industrial Products Business (Elect. & Mech.)
- IS - PMG & Contract Closing
- Regional Operations Division
- Transportation Business & Systems Group
- Defence & Aerospace Business Group

- Renewables & Water Business
- Transmission Business Group
- Project Engg. & Systems Division, Hyderabad
- International Operations

- Bhopal**
  - Heavy Electrical Plant
- Haridwar**
  - Heavy Electrical Equipment Plant
  - Central Foundry Forge Plant <sup>1</sup>
- Hyderabad**
  - Heavy Power Equipment Plant
- Trichy, Thirumayam, Goindwal**
  - High Pressure Boiler Plant, Trichy
  - Seamless Steel Tube Plant, Trichy
  - Power Plant Piping Unit, Thirumayam and Piping Centre, Chennai
  - Industrial Valves Plant, Goindwal
- Ranipet**
  - Boiler Auxiliaries Plant
- Bengaluru**
  - Electronics Division
  - Electronics Systems Division
  - Electro Porcelains Division <sup>2</sup>
- Jhansi**
  - Transformer Plant

- Jagdishpur**
  - Insulator Plant
  - Centralized Stamping Unit and Fabrication Plant <sup>3</sup>
- Rudrapur**
  - Component Fabrication Plant
- Visakhapatnam**
  - Heavy Plates and Vessels Plant

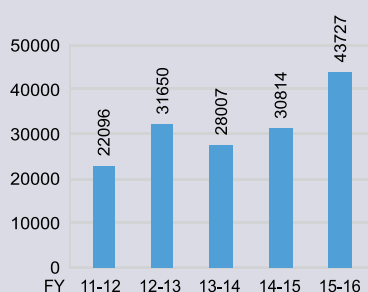
<sup>1</sup> CFFP – Reports to Director (E, R&D)

<sup>2</sup> EPD – Reports to Director (IS&P)

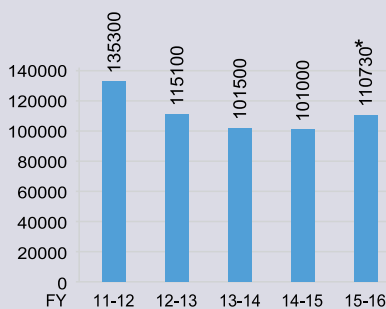
<sup>3</sup> CSU&FP – Reports to Director (E, R&D)

# Year at a Glance

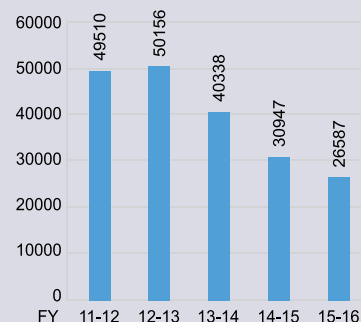
**Orders Received**  
(₹ in Crore)



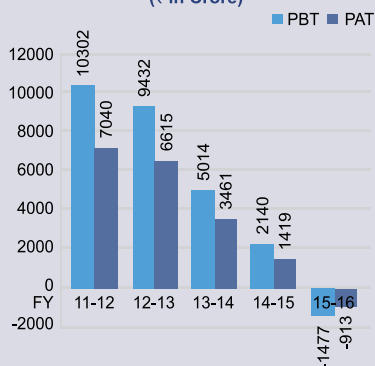
**Orders Outstanding**  
(₹ in Crore)



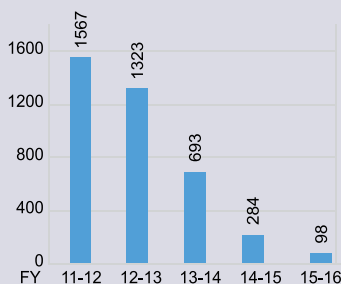
**Turnover**  
(₹ in Crore)



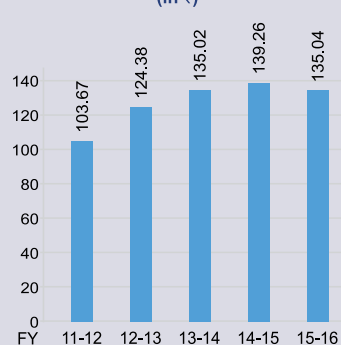
**Profit Before Tax/Profit After Tax**  
(₹ in Crore)



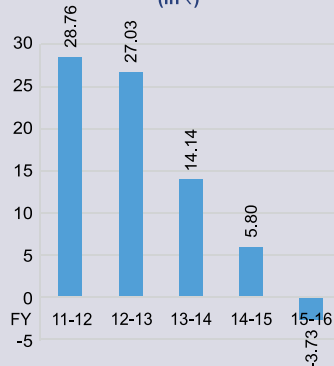
**Dividend Distribution**  
(₹ in Crore)



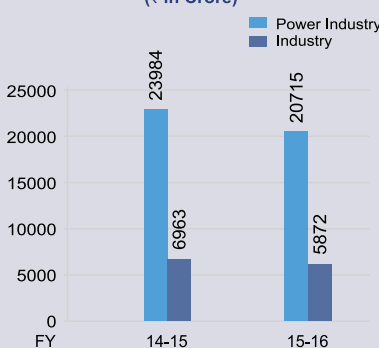
**Net Worth Per Share**  
(in ₹)



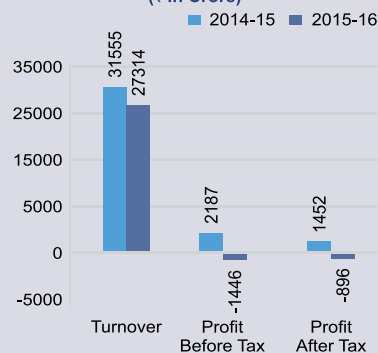
**Earnings Per Share**  
(in ₹)



**Segment-Wise Revenue**  
(₹ in Crore)



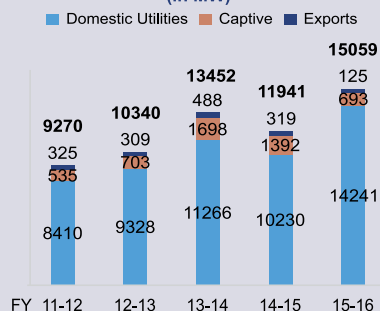
**Consolidated Financial Performance**  
(₹ in Crore)



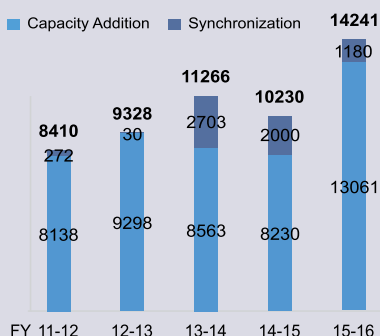
\* Orders worth ₹ 7429 Crore have been excluded during the year from the order outstanding which are not likely to commence and this has no impact on revenue.



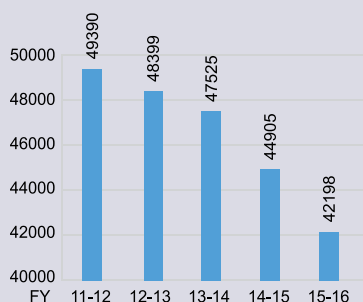
### Power Plants Commissioned/Synchronized (in MW)



### Contribution to India's Utility Power Generation Capacity (in MW)



### Manpower (in Nos.)



**10,000 MW<sup>+</sup>**  
Power projects  
commissioned/synchronized per annum  
for the fourth consecutive year

**170 GW<sup>+</sup>**  
Power Generating Equipment  
installed till date



**74%** Market share  
in Indian Power Sector

Innovation **477**  
patents and copyrights filed



**42,198** **10** Vishwakarma  
No of employees; &  
**7** Shram awards

**4.18**

Training Man-days per employee



Generated  
**8.08** Million units  
energy through  
in-house solar power installations

**11,026**

Vocational trainees &  
**7,157** Act-apprentices trained



Orders in Hand  
**₹ 1,10,730 Crore**

Hydropower projects commissioned in  
the country in 2015-16  
**100%** by BHEL for the second year



# About BHEL

BHEL is embracing the next phase of its growth on the strength of a sturdy foundation of 50 years of its journey of engineering excellence. BHEL is an integrated power plant equipment manufacturer and one of the largest engineering and manufacturing companies of its kind in India. The company is engaged in the design, engineering, manufacture, construction, testing, commissioning and servicing of a wide range of products and services for the core sectors of the economy, viz. Power, Transmission, Industry, Transportation, Renewable Energy, Oil & Gas and Defence with over 180 products offerings to meet the needs of these sectors. BHEL has been the solid bedrock of India's Heavy Electrical Equipment industry since its evolution in 1964.



800 MW IP Turbine under assembly at BHEL works for NTPC Gadawara unit-2

## Power Sector

BHEL is one of the few companies in the world having the capability to manufacture the entire range of power plant equipment and has proven turnkey capabilities for executing power projects from concept-to-commissioning. The power generation sector comprises thermal, gas, hydro and nuclear power plants.

### BHEL:

- Supplies steam turbines, generators, boilers and its auxiliaries upto 1000 MW. Currently executing projects on EPC basis including supercritical sets of 660/700/800 MW ratings
- Supplies hydro turbines and generators of up to 250MW
- Manufactures 220/235/540/550/700MWe nuclear turbine generator sets
- Has proven expertise in plant performance improvement through renovation, modernization and uprating of a variety of power plant equipment
- Has special knowhow of residual life assessment, health diagnostics and life extension of plants
- Has supplied thermal sets that have consistently exceeded national average efficiency parameters.



400 kV Switchyard commissioned by BHEL at Bellary Super Thermal Power Station, Karnataka





Travelling Column Radial Drilling Machine in operation at HPBP, Tiruchirapalli

BHEL's growth has been synchronous with achieving self-sufficiency in indigenous manufacturing of heavy electrical equipment. In the country, BHEL alone constitutes a mammoth 20000 MW per annum capacity for manufacturing of power generation equipment. A widespread network of 17 manufacturing units, 2 repair units, 4 regional offices, 8 service centres, 1 subsidiary, 6 overseas offices, 6 joint ventures, 15 regional marketing centres and current project execution at more than 150 project sites across India and abroad corroborates the humungous scale and size of its operations. With key focus on project execution, worldwide installed base of power generating equipment supplied by BHEL has exceeded 170 GW. BHEL's 55% share in India's total installed capacity and 58% share in the country's total generation from thermal utility sets (coal based) as of March 31, 2016 stand a testimony to its valuable contribution towards nation building.



Locomotive under testing at Centre for Electric Transportation, Bhopal

## Industry Sector

BHEL is a leading manufacturer of a variety of Industrial Systems & Products and meets the growing demand for major industries like oil and gas, metallurgical & mining, fertilizers, sugar, fertilizers, refiners, paper & petro-chemicals etc. Besides this, Industry Sector operations also provide complete solutions for captive power generation, transmission, transportation, renewable energy, water management, defence and other industrial products. Major areas of operation include:

- **Captive Power projects:** Supplies Steam Turbine and Gas Turbine based Captive Power Plants
- **Transmission:** Execution of EHV & UHV substations ranging from 132 kV to 765 kV & HVDC converter stations up to  $\pm 800$  kV, power transformers, shunt reactors, vacuum & SF6 switchgear, gas insulated switchgears, ceramic insulators, etc.
- **Transportation:** Manufactures IGBT based propulsion equipment (traction converter/ auxiliary converter/VCU), 25 kV AC locos, EMU coaches and diesel electric locos upto 1400 HP
- **Renewables:** EPC solutions from concept to commissioning for grid connected and standalone PV applications ranging from kW to MW sized plants, space grade solar panels and space grade batteries
- **Water:** Turnkey solutions for water treatment systems including Pre Treatment plants (PT), Seawater Reverse Osmosis (SWRO) plants, Demineralization (DM) plants, RO plants for industrial applications, Waste Water/ Effluent Treatment plants (WWTP)/ (ETP), Sewage Treatment plants (STP) and Zero Liquid Discharge (ZLD) systems
- **Industrial products (Electrical & Mechanical):** Range of industrial products including oil rigs, wellheads & Xmas tree valves, fabricated equipment & boiler feed pumps, compressors & AC machines
- **Defence:** Supplier of strategic equipment to Indian defence forces including Super Rapid Gun Mount & Integrated Platform Management System for naval Ships, Thermo pressed components, Heat exchangers for LCA, Turret castings for T72 tanks, castings for ships and simulators etc.



*BHEL's first 700 MW supercritical thermal set commissioned at KPCL Bellary*

BHEL also has a widespread overseas footprint in 78 countries including Malaysia, Oman, Iraq, the UAE, Bhutan, Egypt and New Zealand, with cumulative overseas installed capacity of BHEL manufactured power plants nearing 10,000 MW.

The high level of quality & reliability of BHEL products is a testimony to its adherence to international standards by acquiring and adapting some of the best technologies from leading companies in the world including General Electric Company, Siemens AG and Mitsubishi Heavy Industries Ltd. etc., together with technologies developed in its own R&D centres. Most of the company's manufacturing units and other entities have been accredited to Quality Management Systems (ISO 9001:2008), Environmental Management Systems (ISO 14001:2004) and Occupational Health & Safety Management Systems (OHSAS 18001:2007).

BHEL has been adept at transforming itself in line with the market requirements throughout its illustrious journey. Right from its incorporation in a protected market to facing the pressures of a liberalized economy and the current slowdown in the economic environment, BHEL has evolved by transforming its strategies from product manufacturing to market orientation, business excellence through portfolio restructuring and the current focus on sustaining growth through diversification.



*Super Rapid Gun Mount (SRGM) for Indian Naval Ships under construction at HEPP, Haridwar*



*Shri Anant Geete, Hon'ble Union Minister for HI&PE at BHEL Stall during his visit to Make In India Week, Mumbai*



Diversification in transportation, transmission, defence, water & renewables is the strategy adopted to maintain a balanced portfolio of offerings. This strategy of diversifying and capitalizing new business opportunities stems from the commitment to innovation led growth which is an indispensable part of BHEL's business model. R&D focus of the organization is quite diverse ranging from advance ultra supercritical thermal power plants to grid connected renewable energy systems.

BHEL's greatest strength is its highly skilled and committed workforce of about 42,000 employees who have been the cornerstones of BHEL's journey of excellence.



Further, the concept of sustainable development is inculcated in the DNA of BHEL which is evident from its mission statement- "providing sustainable business solutions in the fields of energy, industry and infrastructure". BHEL is also engaging with the society with its social initiatives aimed at Community Development, Health & Hygiene, Education, Environment Protection, Disaster Management, and Talent up gradation/ Skill development.

The future is filled with both exciting opportunities & gruelling challenges. Creating new sources of growth, responsible utilization of infrastructure, building new capabilities and transforming in line with the market realities will be the key to future growth and stakeholders' wealth enhancement. ●

## Efficient transmission all the way!



BHEL is executing the world's largest  $\pm 800\text{kV}$ , 6000 MW UHVDC Multi Terminal North East-Agra transmission link on a turnkey basis together with ABB, including design, system engineering, supply, installation and commissioning for Power Grid Corporation of India Ltd.

This dual Bi-Pole project consisting of Bi-Pole 1 and Bi-Pole 2 will enable the transmission of 6000MW power over the distance of 1728 Km from Biswanath Chariali in Assam and Alipurduar in West Bengal to Agra in Uttar Pradesh. The link has a 33% overload capability, making it the world's largest multi-terminal  $\pm 800\text{kV}$  UHVDC project. This huge infrastructure will help in connecting the bulk remote generation in north east and eastern part of the country to the load centres in north of India. In addition to it, the link is also capable of bi-directional power flow. Pole 1 of the first phase of the Bi-pole 1 is running successfully under commercial operation since 1<sup>st</sup> November 2015.

## Vision

A global engineering enterprise providing solutions for a better tomorrow



## Mission

Providing sustainable business solutions in the fields of Energy, Industry & Infrastructure



## Sustainable Performance

Zero debt company

Consistent dividend paying company since 1976-77

First listed its equity shares on stock exchanges in 1992



## A National Champion

An Indian Maharatna CPSE

One of the largest engineering & manufacturing companies in India serving core sectors of economy viz.

- Power
- Industry

Transmission/Transportation/ Renewables / Defence/ Water/ Oil & Gas/ Industrial Products- Elec. & Mech.

17 Manufacturing Units, 1 Subsidiary, 6 Joint Ventures, 8 service centres & Infrastructure to deal with 150+ project sites

Built India's capability in heavy electrical equipment manufacturing

# World of BHEL

## Global Footprints

References in 78 countries

Offices in 6 countries

Contracted power plant equipment around 17,000 MW

First overseas turnkey project commissioned by an Indian company - executed by BHEL at Tripoli, Libya in 1980

Sudan's largest 500 MW Kosti TPS and two 220 kV substations in Afghanistan successfully commissioned in 2015-16

## Did you know?

3 out of 5 houses in India are supplied power generated from BHEL sets

BHEL commissioned/synchronized an all-time high of 15,059 MW power projects in a single year in 2015-16

All Indian satellites launched by ISRO are equipped with BHEL supplied solar panels since 2002 & batteries since 2005

BHEL is energizing India's north-east with commissioning of 1st unit of highest rating (3x250 MW) coal based power plant in Bongaigaon, Assam

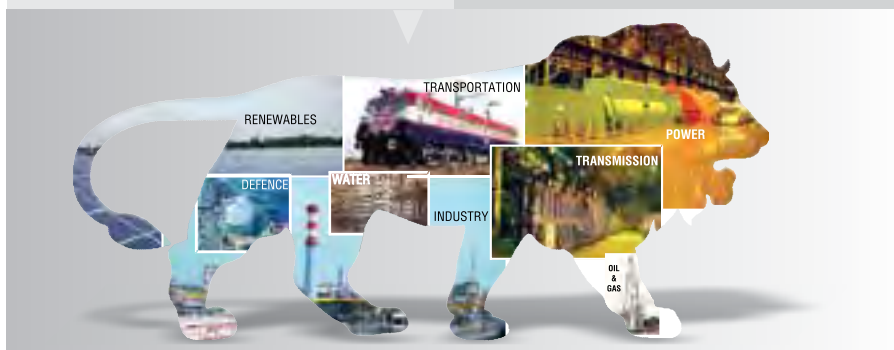
Indian Navy's INS Kochi, Kolkata class missile destroyer ship is equipped with BHEL's Super Rapid Gun Mount and Auxiliary Control systems

World's largest  $\pm 800$  kV, 6000 MW multi-terminal HVDC NE-Agra transmission project under execution by BHEL

95% of hydroelectric generating capacity in Bhutan installed by BHEL

BHEL's first power generating set was the 30 MW thermal power station installed at Basin bridge in Tamil Nadu, way back in 1969

All the 29 states of the country have power generating equipment installed by BHEL.







### Innovation

R&D Expenditure >2.5% of Turnover-highest in Indian engineering field

Five research institutes

14 Centres of Excellence

More than 1 patent/copyright filed per day

Total intellectual capital: 3441

In-house R&D Centres of 12 Manufacturing units/Divisions recognized by DSIR



### Social Onus

Committed to Principles of UN Global Compact

Signatory to Integrity Pact of Transparency International

Undertaken 60 projects on "Swachh Bharat"

Bio diversity

- In-house green coverage of 4.7 million Square meters
- Plantation of more than 3 million trees

BHEL's mobile science vans benefitting school children in vicinity of three units of BHEL viz. Haridwar, Jhansi and Trichy

Supporting 11 mobile medical units for benefits to the needy patients

### Heralding the change towards climate

Supercritical technology resulting in ~11% reduction in CO<sub>2</sub> emissions, less fuel consumption & lower cost to customers

Highest number of eco-friendly supercritical sets commissioned in the country till date

Developing Advanced Ultra Supercritical (AUSC) technology for coal based power plants with NTPC and IGCAR

Developed more efficient EHV Transmission systems and products (765 kV AC, 800 kV DC & 1200 kV AC)

Generated 8.08 MU energy & carbon footprint avoidance of 7800 MT CO<sub>2</sub>-e during 2015-16 through in-house solar power installations

Low lifecycle cost of equipment facilitating affordable and environmentally sustainable energy systems



### Energizing India

Major integrated power plant equipment manufacturer in the world with 20,000 MW pa manufacturing capacity

170+ GW power generating equipment installed till date

55% of India's nuclear power generating capacity (conventional island) installed by BHEL

Commissioned country's first 660 MW indigenously manufactured supercritical set at NTPC Barh-5, in 2013

Commissioned country's first indigenously manufactured 800 MW boiler at APPDCL Krishnapatnam-2, in 2014



### Valuing people

Participative management culture through JCM, Plant Council, Shop Council since 1973

~77% engineers amongst executives

2,300+ female employees

Less than 1% attrition rate

4+ days of training per employee per year



### Unparalleled experience

530,000+ MVA transmission equipment supplied

30,000+ AC machines- supplied, largest Indian manufacturer

15,000+ MW Captive Power Plant installed

190+ MW- cumulative shipments of PV cells, modules, and systems

360 electric locos supplied to Indian Railways & other industries

380+ compressors & 90 oil drilling rigs- supplied

42+ oil rigs- refurbishment & upgradation completed

34 SRGMs supplied



# Recognition of Excellence

Continuing its tradition of bagging prestigious national/international awards, the organisation and its employees won several awards during the year. Notable among these included;

- **7 Prime Minister's Shram Awards** to BHEL employees in recognition of their distinguished performance, innovative abilities, and outstanding contribution in the field of Productivity
- **10 Vishwakarma Rashtriya Puraskars** to BHEL employees for their innovative suggestions leading to cost reduction, improvement in quality, productivity and working conditions, etc.



- **5 National Safety Awards** to BHEL's Tiruchirappalli unit for outstanding achievements in terms of longest accident free period and lowest accident frequency rate at their works.



- **CBIP Award for Best Power Equipment Manufacturing Organisation** for outstanding contribution to the development of the power sector including power generation, transmission and renewable energy from the Central Board of Irrigation & Power



- BHEL was awarded the **Best Overall Performance Award** at the Governance Now PSU Award 2015. BHEL bagged **three more awards** in the category of **Technology Adoption, Research and Innovation** and **CSR Initiatives**.





- **India Pride Award 2015-16 for Excellence in Heavy Industries** from the 'Dainik Bhaskar' group won by BHEL for the seventh consecutive time



- **Top PSU Award 2015** in the Heavy Engineering category from Dun & Bradstreet India



- **DSIJ Award 2015 for the Most Efficient Maharatna PSU 2015** won by BHEL for the 7<sup>th</sup> successive year



- **Top Case Study Award** at the SCOPE International HR Summit, 2016 for development and implementation of online Training Needs Identification tool across BHEL.



- **Runners Up Trophy in Case Study Competition** in NHRDN 3<sup>rd</sup> Learning and Development Summit
- **Greentech Environment Award** in the engineering sector to BHEL Tiruchirappalli for outstanding contribution to environment management from the Greentech Foundation
- **CII Championship Award** to BHEL Haridwar for continuous improvement in Productivity, Quality and Safety from CII
- Mr. Amitabh Mathur, Director (IS&P), was felicitated with the **Distinguished Service Award** by DCE-DTU Alumni Association





- CMD, BHEL was **felicitated** at the **2<sup>nd</sup> annual convocation** of Indian Institute of Engineering Science and Technology (IEST), Shibpur. He also delivered the convocation address 'Accelerating manufacturing through innovation'



- Mr. S N Shrivastava, DGM (IT) and Mr. Vivek Pathak, Sr. Manager (IT) won the **Next 100 CIO Award 2015** from 'IT NEXT' magazine



- Mr Ajay Kumar Kochiri, Senior Engineer, BHEL HPEP Hyderabad, with hearing impairment (84% disability) effectively overcame all the hurdles of life and successfully won the '**Best Employee of the Year, 2015**' award under the 'National Award for the Empowerment of Persons with Disabilities' program. ●



## Smiles for the special!



Arivalayam- the school with a difference- located in the heart of BHEL Township, Trichy, is a special school for the differently-abled children. This marvelous institution which was established in the year 1977 with just seven students has now grown into a full-fledged professionally managed rehabilitation centre with around 200 children. Individualized education program is imparted for children up to 15 years of age. Children above the age of 15 are put in Vocational Training Centre and are offered training for learning life skills. Here, the children learn the art of making garlands, files, pickles, greeting cards, luggage-labels, boiler tube end caps, envelopes, tailoring, telephone cleaning services etc.

As a responsible corporate citizen, BHEL is also supporting four more special care schools in its premises at the manufacturing units in Hyderabad, Bhopal, Haridwar and Vizag. The objective of these schools is to identify the special & unique abilities in the differently abled children which helps them to gain confidence and enhance their abilities to become self-dependent. Empowering these children is BHEL's endeavour to enable them to have a successful journey in their personal as well as professional lives.

## 24 Directors' Report

### 31 Annexure-I

Management Discussion & Analysis

### 70 Annexure-II

CEO and CFO Certificate

### 71 Annexure-III

Sustainable Development

### 83 Annexure-IV

Business Responsibility Report

### 88 Annexure-V

R&D and Technological Achievements

### 93 Annexure-VI

Corporate Governance

### 132 Annexure-VII

Conservation of energy, technology absorption and foreign exchange earnings and outgoings

### 134 Annexure-VIII

Form AOC-I & AOC-II

### 137 Annexure-IX

Independent Auditors' Report and C&AG Comment

# Directors' Report



# Directors' Report

## To the Members,

The Directors are pleased to present the 52<sup>nd</sup> Annual Report on the business and operations of the company and the audited financial statements for the year ended March 31, 2016.

During the year, the company created new benchmark in project execution with the commissioning/synchronization of all-time high of 15,059 MW of power plants in a single year, up by 26% from the previous year. This includes an all-time high power generation capacity addition of 13,061 MW to the Indian utility segment, 59% more than the last year.

The company secured orders worth ₹ 43,727 Crore – the highest in the last five years. The company was able to increase its market share in Power sector from five-year average of 66% to 74%. BHEL recorded Turnover of ₹ 26,587 Crore during the year despite unfavourable business environment.

## Financial Performance

		Financial Year	
Figures (in ₹ Crore except per share data)		2015-16	2014-15
a)	<b>Turnover (Gross)</b>	<b>26587</b>	<b>30947</b>
b)	Excise Duty and Service Tax	(1449)	(1405)
c)	<b>Revenue from Operations (Net)</b>	<b>25138</b>	<b>29542</b>
d)	Other Operational Income	492	700
e)	<b>Total Revenue</b>	<b>25630</b>	<b>30242</b>
f)	Operating Expenses	(27594)	(28153)
g)	<b>Operating Profit/ (Loss)</b>	<b>(1964)</b>	<b>2089</b>
h)	Other Income	1450	1220
i)	<b>Profit/ (Loss) before Depreciation, Finance cost &amp; Direct Tax</b>	<b>(514)</b>	<b>3309</b>
j)	Depreciation	(936)	(1077)
k)	Finance Cost	(27)	(92)

l)	<b>Profit/ (Loss) before tax</b>	<b>(1477)</b>	<b>2140</b>
m)	Direct Tax including Deferred Tax	564	(721)
n)	<b>Profit/ (Loss) after Tax</b>	<b>(913)</b>	<b>1419</b>
o)	Balance brought forward from the previous year	1209	1171
p)	Depreciation Adjustment	-	(40)
q)	<b>Profit available for appropriation</b>	<b>296</b>	<b>2550</b>
r)	<b>Appropriation</b>		
	i) Dividend (including interim dividend )	(98)	(284)
	ii) Corporate Dividend tax (incl. on interim dividend)	(20)	(57)
	iii) Amount transferred to General Reserve	-	(1000)
s)	<b>Balance in Statement of Profit and Loss</b>	<b>178</b>	<b>1209</b>
t)	NAV per share (₹)	135.04	139.26

Figures in bracket denote expenses, loss or appropriation.

Performance of BHEL for the year 2014-15 has been rated as “Good” in terms of MoU signed with the Govt. of India.

## Dividend

The Board has recommended a final dividend of 20 % (₹ 0.40 per share) on share capital of ₹ 489.52 Crore for the year 2015-16. The total payout on account of dividend (₹ 97.90 Crore) along with Corporate Dividend Tax (₹ 19.93 Crore) amounts to ₹ 117.83 Crore.



Shri B.P. Rao, the then CMD, BHEL presenting the Final Dividend cheque for FY 2015-16 to the Hon'ble Union Minister for HI&PE

## Orders Received

Despite operating in a subdued business environment, the company secured orders worth ₹ 43,727 Crore during the year, the highest in the last five years and 42% growth over 2014-15. Sector-wise orders booked are as follows:

	₹ in Crore	
	2015-16	2014-15
Power Sector	38529	24873
Industry Sector	5125	5221
International Operations	73	720
Total Orders Booked	43727	30814
Order Book outstanding at the end of the year	110730*	101000

\*Orders worth ₹ 7429 Crore have been excluded during the year from the order outstanding which are not likely to commence and this has no impact on revenue.

## Events Occurring after the Balance Sheet Date

There were no significant events occurring after the Balance Sheet date.

## Directors' Responsibility Statement

Pursuant to Section 134(5) of the Companies Act, 2013, it is hereby confirmed that:

- In the preparation of the annual accounts for the financial year ended March 31, 2016, the applicable accounting standards have been followed and proper explanation relating to material departures has been provided;

- The Directors have selected such accounting policies and applied them consistently and made judgments and estimates that are reasonable and prudent so as to give a true and fair view of the state of affairs of the company at the end of the financial year and of the profit and loss of the company for that period;
- The Directors have taken proper and sufficient care for the maintenance of adequate accounting records in accordance with the provisions of this Act for safeguarding the assets of the company and for preventing and detecting fraud and other irregularities;
- The Directors have prepared the annual accounts on a going concern basis;
- The Directors have laid down internal financial controls to be followed by the company and that such internal financial controls are adequate and were operating effectively;
- The Directors have devised proper systems to ensure compliance with the provisions of all applicable laws and that such systems are adequate and operating effectively.

## Management Discussion and Analysis

Indian economy is experiencing a turnaround with economic growth projected at 7.6 per cent in 2016-17 in an environment of slow global economic recovery. Performance of the company during the year was affected by subdued business environment.

During the year, an unprecedented feat in the execution of projects was achieved by your company by commissioning/synchronizing an all-time high 15,059 MW of power generation equipment. BHEL booked orders worth ₹ 43,727 Crore - highest in the last five years from its Power Sector, Industry Sector and International Operations. Long term growth strategy of BHEL is to maintain leadership in existing businesses and expand industry business by harnessing opportunities emerging from 'Make in India' in the areas of Solar power, transmission, transportation, defence and water.

Company has mitigation strategies in place to address risks emanating from prevailing economic uncertainties and volatility in business environment. Further, a strong resolve has been made towards transformation of BHEL into an organization which is "Responsive, Robust and Rising" to needs of the customers, employees and shareholders. Focus on Execution, Consolidation and Simplification (ECS) is one of the first steps to initiate this transformation process.

Further details are given in **Annexure-I**.



## Board of Directors

### • Details of changes in Directors & Key Managerial Personnel

#### Appointment

Shri Amitabh Mathur was appointed as Additional Director w.e.f. 01.09.2015 to take charge of the office of Director (IS&P). He was subsequently appointed as Director in the 51<sup>st</sup> Annual General Meeting of the Company.

Shri Subrata Biswas was appointed as Additional Director w.e.f. 24.09.2015 to take charge of the office of Director (E,R&D).

S/Shri Rajesh Kishore, Keshav N. Desiraju and R. Swaminathan have been appointed as Part-time Non-official Directors w.e.f. 18.12.2015.

Shri Atul Sobti, the then Director (Power), BHEL pursuant to DHI Order dated 01.09.2015, was appointed as Chairman & Managing Director, BHEL w.e.f. 01.01.2016.

Shri T. Chockalingam was appointed as Additional Director w.e.f. 11.02.2016 to take charge of the office of Director (Finance).

Dr. Subhash Chandra Pandey, Additional Secretary & Financial Adviser, Department of Industrial Policy and Promotion, Ministry of Commerce & Industry has been appointed as Part-time Official Director w.e.f. 31.03.2016.

Shri Akhil Joshi was appointed as Additional Director w.e.f. 10.08.2016 to take charge of the office of Director (Power).

In accordance with Section 161 of the Companies Act, 2013 and Article 67(iv) of the Articles of Association of the Company, S/ Shri Subrata Biswas, Rajesh Kishore, Keshav N. Desiraju, R. Swaminathan, T. Chockalingam, Dr. Subhash Chandra Pandey and Akhil Joshi being appointed as additional directors, shall hold directorship upto the 52<sup>nd</sup> Annual General Meeting of the company and are eligible for appointment as Directors at the Meeting.

#### Cessation

Shri W.V.K. Krishna Shankar, who was appointed as Director (IS&P) w.e.f. 01.08.2013 ceased to be a Director of the company on attaining the age of superannuation on 31.08.2015.

Shri B. Prasada Rao, who was appointed as Chairman and Managing Director w.e.f. 01.10.2009, ceased to be Chairman and Managing Director w.e.f. 31.12.2015 on completion of his tenure.

Shri S.K. Bahri, former Additional Secretary & Financial Adviser, Department of Industrial Policy and Promotion, Ministry of Commerce & Industry, pursuant to Order dated 26.02.2016 of the Department of Industrial Policy & Promotion, Ministry of Commerce & Industry regarding his repatriation to parent cadre, relinquished his charge of the post of Part-time Official Director on the Board of BHEL w.e.f. 29.02.2016.

The Board of Directors place on record their deep appreciation of the valuable services rendered as well as advice and guidance provided by S/ Shri W.V.K. Krishna Shankar, B. Prasada Rao and S.K. Bahri during their tenure.

Further, pursuant to Section 152 of the Companies Act, 2013 and Article 67(i) of the Articles of Association of the Company, S/Shri D. Bandyopadhyay and Amitabh Mathur will retire by rotation at the Annual General Meeting and being eligible, offer themselves for re-appointment.

In compliance with Regulation 36(3) of the SEBI (Listing Obligations & Disclosure Requirements) Regulations, 2015, brief resume of the Directors proposed for appointment and re-appointment alongwith the nature of their expertise in specific functional areas and names of companies in which the person also holds directorship alongwith the membership of the committees of the Board are given in the explanatory statement/ annexure to the Notice.

No Director has given resignation during the year.

### • Audit committee details

Details of Board Level Audit Committee are given at Point 6.3 of the Corporate Governance Report. Further, there has been no instance where the Board of Directors have not accepted recommendation of the Audit Committee.

## CEO/CFO Certificate

CEO/CFO certificate (as per Regulation 17(8) of Listing Regulations) is placed at **Annexure-II**.

## Sustainable Development

BHEL believes in doing business in a sustainable manner. To promote inclusive growth, the thrust on CSR initiatives continued which resulted in creating social infrastructure for the benefit of community. During 2015-16, an amount of ₹ 66.20 Crore was spent on CSR initiatives by BHEL. The details of sustainability initiatives has been provided in **Annexure-III**.

## Business Responsibility Report

In line with the requirement of the listing regulations, Business Responsibility Report describing the initiatives taken by the company from environmental, social and governance perspectives as per the suggested format is enclosed at **Annexure -IV**.

## R & D and Technological Achievements

BHEL's R&D strategy, structure and infrastructure are aligned to meet the challenges of present & future business environment. The R&D expenditure of the company for 2015-16 is ₹ 893.07 Crore which is 3.36% of the turnover. This includes the expenditure incurred on R&D efforts made at manufacturing units for major modifications/ improvements in products/ designs against customer requirements which are not covered in Corporate R&D projects. The company filed 477 patent and copyright applications during the year 2015-16, enhancing the company's intellectual property in terms of number of such rights to 3441.

Further details have been provided in **Annexure-V**.

## Official Language Implementation

Continuous efforts were made for propagation and effective implementation of Rajbhasha in the company. Inspection of 12 Units/Divisions was done to monitor and review the progress in this area. Committee of Parliament on Official Language appreciated the efforts being made in the area of Official Language implementation during the inspection of HERP-Varanasi on 18<sup>th</sup> September, 2015 and HPBP Trichy on 25<sup>th</sup> January, 2016.



*Hindi Diwas Samaroh organised at BHEL on 14<sup>th</sup> September, 2015*

More than 950 non-Hindi speaking employees were imparted training under the Hindi teaching scheme of Govt. of India. Training for using Hindi in Unicode on computers was also imparted to more than 5000 employees of all the Units/Divisions. 75 Hindi workshops covering more than 1700 employees were organised to motivate employees to work in Hindi. In

addition, a five-day translation training programme was conducted with the help of Central Translation Bureau, Rajbhasha Vibhag, Ministry of Home Affairs, Govt. of India.

Under Inter Unit Rajbhasha Shield Scheme, 11 Units were given award for excellent Rajbhasha implementation. In addition, 323 employees were given cash award for doing their original work in Hindi.

Thirteen Hindi magazines are being published all over the company. A handbook "Rajbhasha Sandarshika" has been prepared as helping material for doing work in Hindi and was distributed to all the Units/Divisions.

## Vigilance

The vigilance department of BHEL is headed by a Chief Vigilance Officer (CVO) appointed by Department of Heavy Industry (DHI), Ministry of Heavy Industries & Public Enterprises, Govt. of India. Major manufacturing units / power sector regions of BHEL have vigilance set ups headed by senior vigilance executives reporting to the CVO.

BHEL is laying more focus on preventive vigilance to tackle corruption. The approach to preventive vigilance includes a combination of review of rules & policies particularly concerning procurement and recruitment, awareness measures and targeting specific functional areas/ issues by engaging stakeholders, in order to minimize scope for corruption. Some of the preventive measures initiated in recent times are as under:

- Review and update of the policies / manuals in order to align them with the extant Govt. policies / guidelines, to bring clarity in the provisions to avoid scope for different interpretations
- Expansion of vendor base to ensure competitiveness
- Demarcation of BHEL land and digitization of land records
- Introduction of audit trail in computerized systems for tracking changes
- Installation of CCTVs to check material movements and improve security environment in unit premises
- Issue of Fraud Prevention Policy and Complaint Handling Policy of the company
- Introduction of on-line complaint system to bring more transparency

A detailed Corruption Mitigation Action Plan in respect

of potential areas of corruption in BHEL has been prepared and it has been taken up for implementation by all units / regions. Potential areas of corruption have been identified, and in each case, detailed strategy has been identified in respect of causes of corruption, proposed action plan to mitigate the same and measurable targets and persons responsible for implementation in the respective units.

Vigilance department is publishing a quarterly **e-Newsletter 'DISHA'** with a view to create awareness about relevant policies, rules and procedures, etc., to disseminate the instructions/ guidelines issued by CVC & Govt. of India from time to time and to share best practices and case studies.



CMD, CVO & GM (Vig.) at Training-cum-Workshop organized for vigilance officers

The Vigilance Awareness Week was observed from 26-31 October, 2015 in corporate office, manufacturing units, power sector regions and project sites of BHEL with the Pledge of Integrity undertaken by the employees. During the week, a documentary film on BHEL **"Chalo Sath Chalein- Ek Anubhav BHEL ka"** was made by BHEL and telecast by Doordarshan in October 2015. Besides showcasing the good governance, transparency and best practices adopted by BHEL, the film highlights how the collective approach of BHEL's management and vigilance has brought benefits to the company.

Routine / surprise inspections were carried out by units / Corporate Vigilance and the learnings were shared with the senior executives of management. In addition, circulars were issued by Corporate Vigilance for systemic improvements in critical areas.

Since BHEL has adopted Integrity Pact, structured meetings are held with the Independent External Monitors (IEMs) every quarter wherein the procurement related issues and complaints thereupon are discussed. The Integrity Pact has been made mandatory for all purchase orders / contracts of value more than ₹ 5 Crore.

## Safety & Security

At BHEL we believe that human life is priceless, loss of which can neither be made up for by monetary compensations nor can its dedication and expertise be substituted. This very premise forms the core of occupational safety programmes in BHEL and inspires us to make the workplace safer for the employees of BHEL as well as for our business associates. BHEL's major manufacturing units are OHSAS 18001 certified, having strong Health, Safety & Environment (HSE) management systems in place. This has resulted in improvement of company's safety performance. At project sites, compared to the year 2014, there was approximately 27% reduction in incidences of fatalities and nearly 29% reduction in the man-days lost due to various types of accidents.

Dedicated Safety and Occupational Health Centres are being run in the factory premises catering to safety and health issues of employees at the work place. Some of the initiatives taken in our units to build and maintain safety and health culture at work place during 2015-16 included:

- Sponsoring BHEL officials for one year advanced diploma course in Industrial Safety, conducted by Central / Regional Labour institute at Mumbai, Kanpur, Kolkata, Chennai and Faridabad
- Sharing of good practices through in-house magazines and hand books on various safety related topics
- Creating awareness about safety through display of posters, safety instructions, standard operating procedures and periodic awareness campaigns
- Conducting health & safety related training sessions for regular employees, contract workers & trade apprentices
- Creating awareness about hazardous chemicals through making available the Material Safety Data Sheet (MSDS) and Standard Operating Procedure
- Conducting special programme on health awareness for women employees
- Creating awareness about road safety amongst the truck drivers associated with transportation of our products
- Conducting as well as getting 3<sup>rd</sup> party external audit for Safety.



The company's security mechanism is sufficient and geared up to provide security to each plant/unit. Whereas the security of most of the plants of the company is being managed by the CISF, in some places, the company has its own security/private agencies sponsored by Directorate General Resettlement, Govt. of India or Ex - Servicemen corporations.

Security audit of major plants is being done by the Intelligence Bureau periodically and the additional requirements wherever pointed out by them, are immediately complied with by the concerned units. Review of security is done internally also from time to time.

Adequate measures have been taken by installation of CCTV's and Standard Operating Procedure (SOP) in many plants and offices to mitigate any security threats. The management, security staff and the employees of the company are sensitized to the security needs of the company.

### Data and Cyber Security

An organizational Crisis Management Group (CMG) has been set up in BHEL for countering cyber-attacks and cyber terrorism, in pursuance of priorities and directives from Ministry of Heavy Industries and Public Enterprises, Govt. of India. Crisis Management Plan (CMP) for BHEL is also in place. All database administrators across various locations of the company are notified.

BHEL has created a team of 65 information security professionals through training and certification courses, meeting one of the key objectives of national cyber security policy of Govt. of India to protect Indian cyber space.

All units, regions and divisions of BHEL have been certified for ISO/IEC 27001:2013 for Information Security Management System (ISMS).

### Corporate Governance

As per the requirements of the Listing Regulations, a detailed report on Corporate Governance (including Board/Committee meeting details) together with the following is given at **Annexure – VI**.

- (i) Auditors certificate on Corporate Governance under Listing Regulations & DPE guidelines on Corporate Governance.
- (ii) Secretarial Audit Report u/s 204(1) of the Companies Act, 2013 and management reply thereon.

- (iii) Extracts of Annual Return pursuant to section 92(3) of the Companies Act, 2013 read with rule 12(1) of the Companies (Management and Administration) Rules, 2014

Declaration under section 149(6) of the Companies Act, 2013 pertaining to criteria of independence has been given by the Independent Directors to the Board of Directors.

### Loans and Investments

Details of loans and investments covered under the provisions of Section 186 of the Companies Act, 2013 forms part of financial statement, attached as a separate section in the Annual report FY 2015-16. Loan of ₹ 3 Crore towards working capital was given during 2015-16 to M/s BHEL EML, BHEL's subsidiary company.

### Other Disclosures

Information in accordance with the provisions of Section 134(3)(m) of the Companies Act, 2013 read with Companies (Accounts) Rules, 2014 regarding conservation of energy, technology absorption and foreign exchange earnings and outgoings is given at **Annexure-VII**.

As per provisions of section 197 of the Companies Act, 2013 read with the Rule 5 of the Companies (Appointment and Remuneration of Managerial Personnel) Rules, 2014, every listed company is required to disclose the details of the remuneration of the Directors etc. in the Directors' Report. However as per Notification No. GSR 463(E) dated 5<sup>th</sup> June, 2015 issued by the Ministry of Corporate Affairs, Government Companies are exempted from complying with provisions of section 197 of the Companies Act, 2013. BHEL being a government company, such particulars are not included as part of Directors' Report.

Statement pursuant to Section 129 of the Companies Act, 2013 (Form AOC-1) relating to subsidiary companies & joint ventures and Form AOC-2 pursuant to section 134(3)(h) of the Companies Act read with Rule 8(2) of the Companies (Accounts) Rules, 2014 are given at **Annexure-VIII**.

### Links to Company Websites :

1. Familiarisation Programme of Independent Directors, Weblink :  
[http://www.bhel.com/investor\\_relations/investor.php](http://www.bhel.com/investor_relations/investor.php)

2. Policy Determining Material Subsidiaries and Policy Dealing with Related Party Transactions, Weblink :

[http://www.bhel.com/pdf/Policy\\_with\\_regard\\_to\\_Related\\_Party\\_Transactions.pdf](http://www.bhel.com/pdf/Policy_with_regard_to_Related_Party_Transactions.pdf)

## Auditors

The auditors of BHEL are appointed by the Comptroller and Auditor General of India. The names of auditors appointed for the year 2015-16 are printed separately in the Annual Report.

The detail of cost auditors appointed for the year 2015-16 and cost audit details are printed separately in the Annual Report.

The Auditors' Report and Comments of the Comptroller and Auditor General of India are given at **Annexure- IX**.

## Acknowledgements

The Board places on record its sincere appreciation towards the company's valued customers in India and abroad and esteemed shareholders for the support and confidence reposed by them in the management of the company and look forward to the continuance of this mutually supportive relationship in future.

The Board also gratefully acknowledges the support and guidance received from various ministries of the Govt. of India, particularly the Department of

Heavy Industry, in the company's operations and developmental plans. The Directors also express their gratitude to the Comptroller and Auditor General of India, Chairman and Members of Audit Board, Statutory Auditors, Branch Auditors, Secretarial Auditor and Cost Auditors. The company also wishes to place on record its appreciation for the continued co-operation received from all the technology collaborators and suppliers and for the support provided by the financial institutions and bankers. Last but not the least, the Board wishes to place on record its deep gratitude to all BHELites whose enthusiasm, team effort, devotion and sense of belongingness have made this great company proud.

For and on behalf of the Board of Directors of  
**BHARAT HEAVY ELECTRICALS LTD.**



**Atul Sobti**

Chairman & Managing Director

**Place : New Delhi**

**Dated : August 10, 2016**

# Annexure-I

## Management Discussion and Analysis

### 1.1 Economic & Business Overview

Global economic recovery continues at a slow pace but is running above the post 2008 crisis average. The world output grew at a modest 3.2 per cent in 2015-16, broadly in line with 2014-15. But, on the back of stronger performance in emerging market economies, global growth is expected to pick up in 2017 and is likely to be in the vicinity of 3.5 per cent. Emerging markets and developing economies accounted for the major share of projected world growth in 2016 but prospects across countries remain uneven. Asia remains the most dynamic part of the global economy but is facing headwinds from a still weak global recovery, slowing global trade, and the short-term impact of transition phase of Chinese economy. Still, the region is well positioned to meet the challenges ahead, provided it strengthens its reform efforts.

In India, growth is projected at 7.6 per cent in 2016-17. Growth will continue to be driven by private consumption, which has benefited from lower energy prices and higher real incomes and is expected to drive the economy. India continues to shine bright amidst a “cloudy” global economy. A gradual transformation is taking place. Domestic and external vulnerabilities have moderated on the sharp decline in the Current Account Deficit & inflation, the fiscal position has begun to improve, and a resumption of capital inflows allowed a significant build up in foreign reserves. Sharp fall in the commodity prices is reducing the trade deficit and giving a net boost to economic activity. Important economic reforms, including enhancing financial inclusion, rationalization of subsidies, progress in introduction of Goods and Services Tax and relaxing FDI limits in several key sectors have buoyed the investment sentiment.

Industrial production grew at 2.4% during 2015-16 against 2.8% in 2014-15, mainly pulled down by weak manufacturing in an environment of subdued investment demand. The manufacturing sector grew at 2.0% during 2015-16 vis-à-vis 2.3% during 2014-15. Cumulative growth in capital goods sector also remained weak, recording contraction of (-) 2.9% against 6.3% during 2014-15. The growth of capital goods industry has lagged in recent years and the sector is facing a variety of issues and challenges.

The capital goods industry is expected to witness good growth in long term on the back of government's initiatives such as 'Make in India' and Capital Goods Policy, which are aimed at increasing production, employment, skill availability, technology depth and exports.

Overall, green shoots are visible in the economy. Rural demand recovery is pinned on a good monsoon and the growth in wages on account of the Seventh Pay Commission awards should lead to higher consumption levels in the near future. Sustaining strong growth over the medium term will however require structural reforms and dismantling of infrastructure bottlenecks. ●



# Power Sector

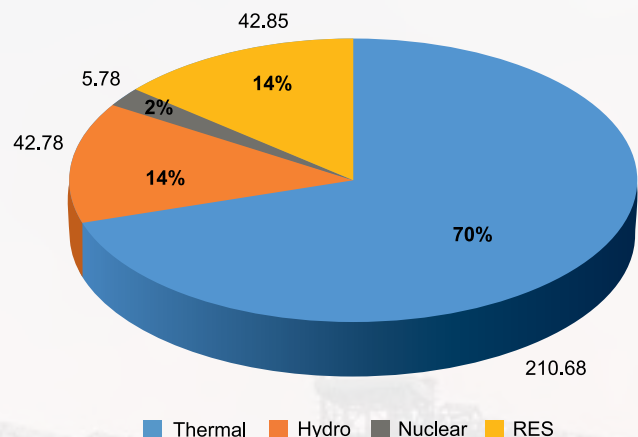
## 1.2 Profile and Performance of Business Segments

### 1.2.1 Power Sector

#### Opportunities

The economy of India continues to grow at a promising pace largely driven by rapid urbanization, demographic expansion and favourable policy environment. Energy security in India is vital for its stable economic growth, as global energy supply and demand is expected to become tighter in decades to come. With current installed capacity base of over 300 GW, India has come a long way in development of power sector.

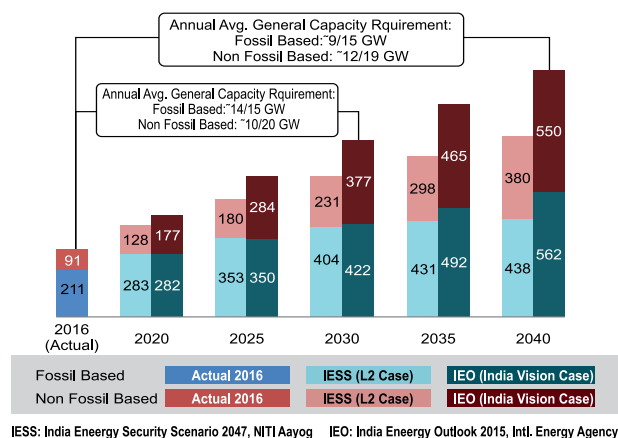
#### Installed Generation Capacity (GW) - Fuelwise



As on 31st March, 2016 Source: CEA, Ministry of Power

Today, about 70% of the country's installed capacity is from fossil fuels. With a capacity addition of 85,186 MW during the first four years of the 12<sup>th</sup> Plan, the country has not only exceeded the achievement of 54,964 MW capacity added during the entire 11<sup>th</sup> Plan (2007-12) through conventional sources, but also already achieved ~96% of the 12<sup>th</sup> plan target, with one year remaining.

The recent initiatives of Govt. of India, like '24x7 Power for All', '100% village electrification by 2018', 'Make in India', 'Smart Cities', 'UDAY', etc. are likely to enhance the demand for power in the country. Further, to deliver a sustained economic growth rate of 8.0% up to 2035, India needs to increase its primary energy supply by three to four times based on current levels. This represents a need for substantial augmentation of power generation and transmission capacity from current levels.

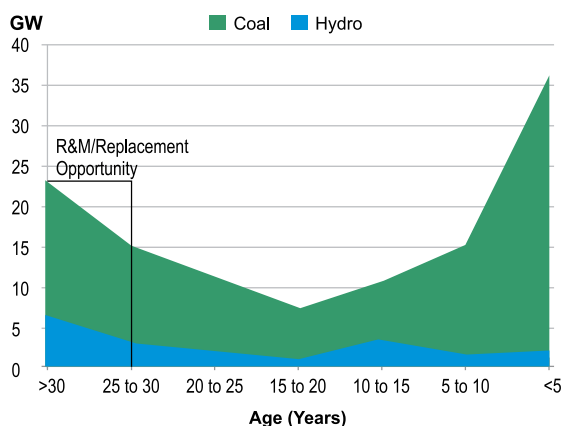


Renewable sources are expected to play a major role in the above capacity addition. However, in view of the large domestic reserves of coal in the country, coal based power plants are expected to continue to remain the backbone of country's power generating capacity in the next few decades. Their suitability for continuous, round-the-year operation, large ratings and achievement of significant improvement in efficiency & emission levels through technology upgradation ensures that coal based power plants will continue to be the major sources of power generation.

Apart from new capacity additions, huge opportunity exists in Renovation & Modernization (R&M) business as about 22% of India's coal based power plants are over 25 years old and 27% of India's hydropower plants have completed 35 years, thus necessitating increasing requirement of life extension and performance & efficiency upgrades.

Further, the present focus on sustainable energy and promulgation of revised emission norms necessitates replacement of such old power plants with more efficient and environment friendly technologies like supercritical, advanced ultra supercritical, etc.

#### AGE WISE ANALYSIS OF BHEL'S UTILITY SETS



#### Current Business Environment

The Govt. of India, in Dec. 2015, notified the new, more stringent, emission norms for both, existing and upcoming thermal power plants. These norms necessitate the incorporation of emission control equipment in coal based power plants, which shall open up an opportunity of retrofitting emission control equipment in the existing plants, besides increasing the scope in the new plants being setup within the country.



In order to address the emission concerns from old plants, Ministry of Power is encouraging replacement of old and inefficient subcritical plants with new, more efficient, supercritical plants. This shall bring forth an additional opportunity for manufacturers of supercritical plant.

Developers of power plants had been facing numerous constraints like coal block de-allocation, delays in environment clearance, land acquisition, financing & funds tie ups etc. for the last few years. Govt. of India has taken various initiatives to resolve these issues, which have resulted in the sector showing green offshoots now, with improvement in ordering witnessed this year. Coal availability, which has been the major obstacle for the setting up of coal based power plants, has been addressed to a large extent through measures like coal block allocations to public sector developers, coal block auctions, formulation of 'Bridge Linkage policy', increased coal production etc.

Introduction of 'Ujwal Discom Assurance Yojana (UDAY)', a major initiative of the Govt. of India for the improvement of financial health of DISCOMs, is another encouraging initiative.

With the aforementioned initiatives, a number of power projects are in pipeline and in advanced stage of ordering, awaiting last mile activities.



India has huge hydropower potential of 148 GW, out of which only ~43 GW has been realized till 31st March 2016. Steps have been taken to attract investments into the hydro sector and improve the falling share of hydroelectricity in the country's installed capacity mix. Hydropower generation needs to play a significant role in balancing of generation, which is likely to be a major challenge with the advent of increased share of renewable power. This is likely to result in a major thrust to hydro projects.

Nuclear power forms an integral part of Govt. of India's strategy for clean and green energy. Nuclear Power Corporation of India Ltd. is likely to come up with ordering of twelve 700 MWe nuclear power projects (8.4 GWe) based on Pressurised Heavy Water Reactor (PHWR).

### Offerings

BHEL is one of the few companies in the world having the capability to manufacture the entire range of power plant equipment and has proven turnkey capabilities for executing thermal, gas, hydro and nuclear power projects.

BHEL has the capability from concept to commissioning for thermal power plants encompassing steam turbines, generators, boilers and matching auxiliaries up to 1000 MW ratings. BHEL is currently executing numerous prestigious projects on EPC basis including supercritical sets of 660/700/800 MW ratings.



800 MW LP Rotor being manufactured at HEPP, Haridwar

BHEL also supplies and executes Circulating Fluidized Bed Combustion (CFBC) boilers for thermal plants, suitable for wide range of fuels like pet-coke, washery-rejects, lignite, etc.

BHEL offers gas turbines and matching generators ranging upto 299 MW (ISO) rating, tailored to meet specific

needs, for both open and combined cycle operation. The company manufactures 220/235/500/540/700 MWe nuclear turbine-generator sets and is geared up to take higher rating nuclear sets. BHEL has signed an MoU with Bhabha Atomic Research Centre (BARC) for development of secondary cycle system for 300 MW Advanced Heavy-Water Reactor (AHWR) based nuclear power plant, ushering the nation to the third stage of Nuclear Power Plan. Custom-made conventional hydro turbines of Kaplan, Francis and Pelton types with matching generators, pump turbines with matching motor generators upto 300 MW are also engineered and manufactured by BHEL.

BHEL also offers customized equipment for emission control. BHEL has supplied equipment for control of particulate matter, not only for boilers supplied/ manufactured by BHEL, but also for boilers of other manufacturers. BHEL is also offering NOx and SOx control systems as per customer requirements.

The company has proven expertise in plant performance improvement through renovation, modernization and uprating of a variety of power plant equipment, besides specialized know-how of residual life assessment, health diagnostics and life extension of plants. Retrofit packages for ESP to meet the latest environmental norms and retrofit package for Control & Instrumentation (C&I) with state of the art technologies are also being offered by BHEL.

### Achievements during the Year

#### Order Booking

Power Sector secured orders worth ₹ 38,529 Crore, for 9,221 MW of power projects, with a market share of 74% against previous five years average of 66%. This is despite intense competition, which reinforces the leadership of BHEL in Indian power sector. It also marks the highest ordering levels for BHEL in the past 5 years. These include orders for ten Turbines & Generators (TG) and twelve Steam Generators (SG) for supercritical sets, the highest in a single year. BHEL secured India's largest power sector order from TSGENCO for 5x800 MW Yadadri project on EPC basis for ₹ 17,950 Crore and also country's first private sector thermal power project in the last 4 years for 1x525 MW Megha Engineering and Infrastructure Ltd. / Tuticorin Stg IV.

The average share of Engineering, Procurement, Construction (EPC) orders in the past 3 years has also been remarkable, with EPC business in the utility segment contributing to 58% of the total orders in this period.



## Major Orders Received

Significant utility orders received in the Power sector:

THERMAL	
•	5x800 MW TSGENCO / Yadadri (EPC)
•	2x800 MW TANGEDCO / Uppur (Main Plant)
•	1x800 MW TANGEDCO / North Chennai (Main Plant)
•	1x800 MW APGENCO / Vijaywada (BTG)
•	1x800 MW APPDCL / Krishnapatnam(BTG)
•	2x800 MW NTPC / Telangana STPP at Ramagundam (SG Pkg)
•	1x525 Megha Engineering & Infrastructures Ltd. (MEIL) / Tuticorin Stg IV (BTG)
HYDRO (696 MW LIS)	
•	6x116 MW Navayuga Engg. Co. Ltd / Pranhita Chevella LIS Pkg #6 (LIS Pkg)

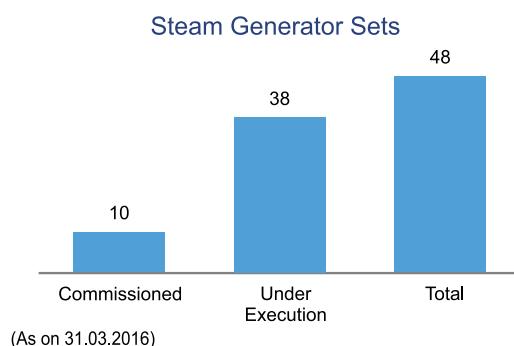


BHEL bags order for 2x800 MW Supercritical Power Project Uppur (Main Plant Pkg.) in Tamil Nadu

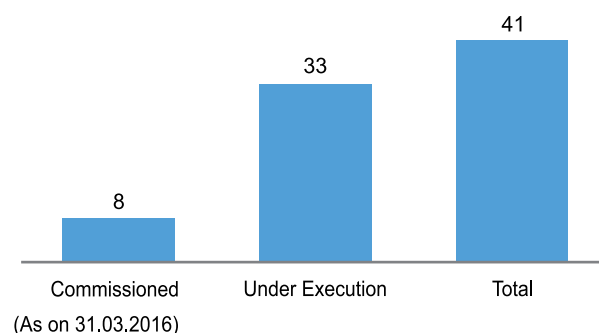
## Supercritical Experience

BHEL has been at the forefront to install environment friendly supercritical coal fired power plants within the country and has secured orders for 48 steam generators & 41 turbo-generators till 31.03.2016, out of which 4 SG & 2 TG sets are in successful operation for more than 1 year.

### Supercritical Portfolio of BHEL



### Turbine Generator Sets

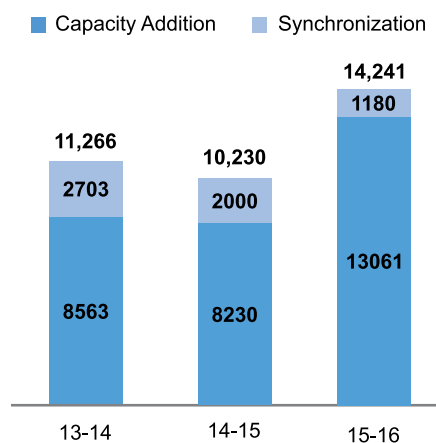


- 6 supercritical sets commissioned in 2015-16. Overall 8 TG sets and 10 SG Sets commissioned by BHEL till 31.03.2016
- 55% of the total supercritical sets commissioned in the country during 2015-16 contributed by BHEL

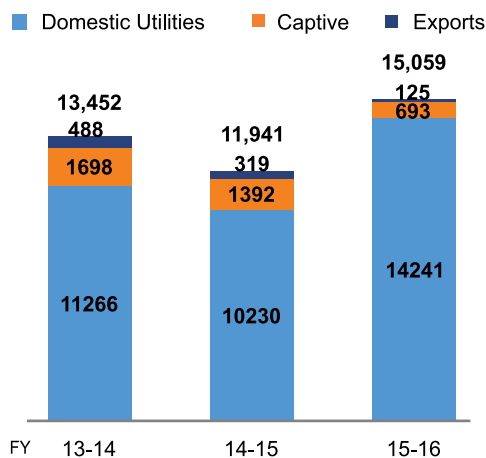
### Projects Commissioned - Setting the Benchmark

- BHEL has continued to cross 10,000 MW mark of commissioning / synchronisation for the fourth consecutive year of the 12<sup>th</sup> Plan.
- Capacity addition by BHEL during the first 4 years of the 12<sup>th</sup> Plan (39,152 MW) has exceeded the 5 year achievement of the 11<sup>th</sup> Plan and 94% of the 12<sup>th</sup> Plan Target for the company (41,661 MW).
- Commissioned utility projects aggregating to 13,061 MW, which is up by 23% against the commissioning target of 10,651 MW set by Ministry of Power and 59% more than the achievement of previous year.
- Commissioned 810 MW hydro projects – the highest in hydro segment in the last 11 years.

### Utility Sets Commissioned/Synchronised (MW)

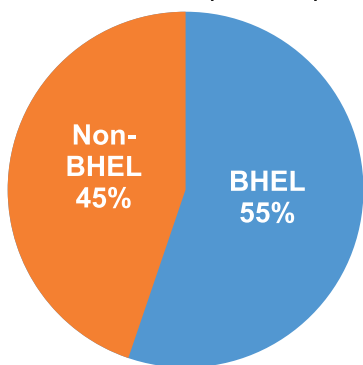


### Total Commissioned/Synchronised (MW)



- Installed capacity of BHEL supplied utility sets in India amounts to 1,45,354 MW which includes 1,14,215 MW coal based and 20,039 MW hydro based equipment.
- BHEL maintained its lion's share of 55% in the country's total installed capacity of 2,65,598 MW comprising coal, gas, diesel, hydro and nuclear sets (excluding renewables and based on original rating of the plants).

### Installed capacity- Utility\* 2,65,598 MW (31.03.16)

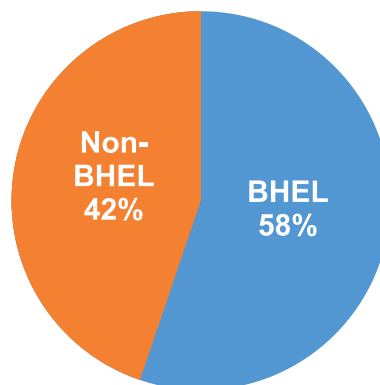


\*Coal, Gas & CCP, Diesel, Nuclear & Hydro

Note: Excludes Renewables and based on original rating of the plants

- 58 % of the country's total generation of 896 BUs from thermal utility sets (coal based) was contributed by BHEL supplied sets, testifying superior performance of BHEL sets.

### Generation- Utility\*\* 896 BU (2015-16)



\*\* Coal & Lignite

### Major Achievements

- Company's first highest rating 800 MW set successfully commissioned by BHEL at Yeramarus
- Developed & commissioned BHEL's first 700 MW rating set at Bellary, Karnataka
- 1<sup>st</sup> Unit of the highest rating (3x250 MW) coal based power plant in North-East India commissioned at Bongaigaon, Assam

### Utility Sets Commissioned during the year

34 utility sets commissioned in 2015-16 expanding BHEL footprints to 423 coal based sets, 403 hydro utility sets and 101 gas based sets installed in India showcasing experience and execution capabilities.





2x500 MW Anpara-D project executed by BHEL on EPC basis

Project	MW	Comm. Date
<b>Utility Sets (Domestic) : 34 Sets / 13,060.6 MW</b>		
<b>Coal : Sets 25/12215 MW</b>		
Anpara-D-6	500	06/06/15
Bongaigaon-1	250	22/06/15
Tuticorin-2	500	09/07/15
Vindhyachal-13	500	06/08/15
Sikka-4	250	25/09/15
Vizag-1	520	06/12/15
Sagardighi-3	500	14/12/15
Bara Prayagraj-1	660	25/12/15
Kakatiya Stage-2	600	31/12/15
Lalitpur-2	660	08/01/16
Goindwal-1	270	14/02/16
Bellary-3	700	01/03/16
Anpara D-7	500	06/03/16
Singareni-1	600	13/03/16
Goindwal-2	270	15/03/16
Nabinagar-1	250	20/03/16
Chandrapur-9	500	21/03/16
Bokaro-A	500	22/03/16
Jhabua-1	600	22/03/16
Muzaffarpur-4	195	24/03/16
Lalitpur-1	660	26/03/16
Mauda-3	660	28/03/16
Yermarus-1	800	29/03/16

Parli-8	250	30/03/16
Vizag-2	520	31/03/16
<b>Gas: 01 Set / 35.6 MW</b>		
Monarchak STG	35.6	14/01/16
<b>Hydro: 08 Sets / 810 MW</b>		
Koldam-3	200	10/04/15
Shrinagar-1	82.5	10/04/15
Shrinagar-3	82.5	20/04/15
Shrinagar-4	82.5	03/06/15
Shrinagar-2	82.5	08/06/15
Koldam-4	200	12/06/15
Teesta Low Dam Stage-IV 1	40	14/02/16
Teesta Low Dam Stage-IV 2	40	17/03/16



4x200 MW Koldam HEP commissioned by BHEL

### Performance of Equipment

Power plants with BHEL supplied equipment continue to exhibit above par performance in respect of Plant Load Factor (PLF), Operating Availability (OA) and outages.

- 158 thermal sets achieved PLF of over 70%. Out of these, 17 sets registered PLF of over 90% and 62 sets achieved PLF between 80% - 90%. Further, 79 sets achieved PLF between 70% - 80%.
- 162 thermal sets achieved OA higher than 90%.
- 183 thermal sets clocked uninterrupted operation of more than 90 days during the year out of which, 2 sets continuously operated for more than 300 days, 16 sets continuously operated for 200 - 300 days, 4 sets operated thrice continuously for more than 90 days and 57 sets operated twice continuously for more than 90 days.



- Nuclear sets registered an OA of 88.2 % and PLF of 86.7 % in 2015-16.
- 11 out of 12 nuclear sets clocked uninterrupted operation for more than 90 days.

### Customer Focus

- Capacity Addition of 100% of NTPC (5 sets/1,810 MW), NTPC JV (2 sets/ 445 MW) and GVK (6 sets/ 870 MW) projects during the year
- All four units commissioned within a span of 60 days for Shrinagar HEP 4x82.5 MW
- 2,980 MW (including 3 supercritical sets) added during 2015-16 in Power Development Program of Uttar Pradesh State



660 MW supercritical unit commissioned by BHEL at PPCL's Bara Prayagraj

- Two units of Lalitpur 3x660 MW commissioned within a span of 78 days in 2015-16. The third unit synchronised within 4 days after commissioning of the first unit



3x660 MW supercritical unit of Lalitpur Super Thermal Power Project (STPP) commissioned by BHEL in Uttar Pradesh

### Renovation & Modernization

During the year, BHEL carried out the renovation & modernization and up-rating of the following units, which has led to achievement of initial designed capacity/up-rated capacity, even after 25 years of

operation. This is a testimony to BHEL's product & service excellence.



R&M job undertaken by BHEL at Harduaganj Unit 7 (110 MW)

### R&M Projects completed in 2015-16

Project	MW	Category	State	Remarks
BSPGCL Barauni Unit#7	110	Thermal	Bihar	Synchronized with the Grid
UPRVUNL Harduaganj Unit#7	120	Thermal	Uttar Pradesh	Uprated to 120 MW from 110 MW
UPRVUNL Obra Unit#10	200	Thermal	Uttar Pradesh	Synchronized with the Grid
UPRVUNL Obra Unit#7	100	Thermal	Uttar Pradesh	Synchronized with the Grid
UPJVNL Rihand#3	50	Hydro	Uttar Pradesh	Synchronized with the Grid
<b>Total</b>	<b>580</b>			

### In-situ Repairs

BHEL demonstrated its ability to carry out major repairs in-situ, and thus was able to save time & cost of such repairs. Some of the repairs are replacement of LP Turbine Steam Inlet Bellow at OPGCL Unit-2 (210MW), and machining of Journal#2 & Bearing#2 replacement at Wanakbori TPS Unit-3 (210 MW).

### Acknowledgement & Recognition of Excellence

Customers have appreciated efforts made by BHEL towards achieving the work completion target ahead of schedule in challenging conditions, equipment performance and improvements in existing systems in the area of erection/commissioning, as well as towards SAS activities. Some of the appreciation letters received in various categories are:

## Commissioning

- KPCL: For successful synchronisation of Bellary Unit #3 - 1x700 MW EPC and Yeramarus Unit #1 - 2x800 MW BTG+Civil



Highest rating 800 MW supercritical thermal set commissioned by BHEL at RPCL Yeramarus, Karnataka

- SCCL: For a commendable job of achieving synchronisation and full loading of Unit-1 (600 MW) on the same day i.e. 13th March, 2016



2x600 MW plant of Singareni Collieries Company Limited (SCCL) commissioned by BHEL in Telangana

## Overhauling

- GSEGCL: For refurbishment/renovation of 7 fields of ESP phase-wise, without taking full shutdown and handing over the ESP to customer in minimum possible time at Ukai Unit-6 (500 MW)
- RVUNL: For successful completion of work of overhauling of TG of Chhabra-TPS Unit-2

## Spares & Services

- NTPC Rihand #6: For restoration of unit
- GGSSTP Ropar: For completion/replacement of APH

- OHPC Rengali # 1, 2 & 4: For restoration of units damaged due to fire
- DVC Chandrapura # 8: For restoration of generator
- GSECL Ukai # 8: For R&M work of refurbishment /renovation of 7 fields of ESP
- GSECL Ukai # 4 HEP: For R&M work of generator stator
- OHPC Burla # 1 & 2: For rectification of exciter system
- NTPC Korba # 2 & 5: For ESP retrofit
- NTPC Dadri # 1-4: For C&I retrofit

## Others

- SAIL-ISP: For successful islanding of STG-1, 2, 3 during the power failure from DVC and subsequent synchronisation of all STGs on restoration of power

## National Awards for Meritorious Performance

Power stations equipped with BHEL supplied sets received meritorious award in June, 2015, under 'National Awards for Meritorious Performance' by Ministry of Power, Govt. of India, for exemplary performance during 2013-14 under different categories.

- 6 of 6 (100%) power stations awarded for early completion, were set up by BHEL

Award Category	Plants that received the awards for Early Completion during 2013-14
<b>Gold</b>	<ul style="list-style-type: none"> <li>• Jindal Power's O.P. Jindal Super Thermal Power Project, Unit - 2</li> <li>• SJVNL's Rampur Hydro Electric Project, Unit - 5</li> <li>• NHPC's Nimoo Bazgo Hydro Electric Project, Unit - 3</li> </ul>
<b>Silver</b>	<ul style="list-style-type: none"> <li>• Jindal Power's O.P. Jindal Super Thermal Power Project, Unit - 1</li> <li>• SJVNL's Rampur Hydro Electric Project, Unit - 2</li> </ul>
<b>Bronze</b>	<ul style="list-style-type: none"> <li>• DB Power's Badadarha Thermal Power Project, Unit - 1</li> </ul>



*Jindal Super Thermal Power Project awarded National Gold Award for Early Completion (2013-14)*



*Nimoo Bazgo Hydro Electric Project awarded National Gold Award for Early Completion (2013-14)*

- 10 out of 16 (63%) of the power stations awarded for their performance have BHEL supplied power equipment.



*Rampur Hydro Electric Project awarded National Gold Award for Early Completion (2013-14)*

Award Category	Stations that received the awards for their performance during 2013-14
<b>Gold</b>	<ul style="list-style-type: none"> <li>• NPCIL's Kakrapar Atomic Power Station</li> </ul>
<b>Silver</b>	<ul style="list-style-type: none"> <li>• NTPC's Dadri Combined Cycle Gas Turbine Station (*)</li> <li>• NPCIL's Rajasthan Atomic Power Station (*)</li> <li>• NPCIL's Kaiga Generating Station (*)</li> </ul>
<b>Bronze</b>	<ul style="list-style-type: none"> <li>• NTPC's Ramagundam Super Thermal Power Station(*)</li> <li>• NTPC's Korba Super Thermal Power Station</li> <li>• CESC's Budge Budge Thermal Power Station (*)</li> </ul>
<b>Certificate of Merit</b>	<ul style="list-style-type: none"> <li>• NTPC's Vindhyachal Super Thermal Power Station (*)</li> <li>• Tata Power's Trombay Thermal Power Station</li> <li>• PSPCL's Guru Hargobind Thermal Plant, Lehra Mohabbat I &amp; II</li> </ul>

(\*) BHEL+ NON BHEL sets



*Kakrapar Atomic Power Station awarded National Gold Award for Meritorious Performance (2013-14)*

## Preparing for Growth

BHEL is geared up to address new opportunities arising from the revised emission norms as notified by Govt. of India by offering customized emission control solutions. BHEL is already offering state-of-the-art technologies for reduction of SO<sub>x</sub>, NO<sub>x</sub> and particulate matter emissions to meet the new norms. Besides providing the equipment for upcoming projects, BHEL has the capability to provide emission



control solutions for various sets already in operation.

BHEL has already established itself as a market leader in the field of supercritical technology. BHEL has developed the capabilities to indigenously manufacture supercritical sets, in-line with government's initiative for 'Make in India'.

BHEL is continuously working towards achieving higher efficiencies through technological enhancements. These higher efficiencies will reduce the coal consumption as well as CO<sub>2</sub> emission levels. To further strengthen its capabilities, the company is striving for indigenous development of nation's first Advance Ultra Supercritical Technology based plant, which is a pioneer R&D project undertaken jointly with NTPC and Indira Gandhi Centre for Atomic Research.



*Indigenous development of nation's first Advance Ultra Supercritical Technology (AUSC) based plant undertaken jointly with NTPC and IGCAR*

BHEL is enlarging its scope of offer with inclusion of new products viz. Water Management system, Air Cooled Condenser, BoP system, emission control equipment like Flue Gas Desulphurization (FGD), Selective Catalytic Reduction (SCR), Selective Non-Catalytic Reduction (SNCR), etc. in its power sector portfolio.

Exploration of new business models with partnerships for power plant developers for upcoming UMPPs and debt financing for new projects in partnership with Financial Institutions are also underway. The company will also be introducing state-of-the-art CFBC technology suitable for wide range of fuels like pet-coke, washery-rejects, lignite, etc.

In hydropower sector, BHEL has enhanced its capabilities to manufacture upto 300 MW hydro sets. Development of efficient runner profiles and reduction of hydro turbine weights have been instrumental in BHEL's recent successes in the field. BHEL has also emerged as a dominant player in large size Pump-Motors required in lift Irrigation scheme being implemented by state governments. BHEL is also targeting emerging opportunities for R&M and spare business in hydropower plants.

To harness emerging opportunities in Nuclear power, the company is working towards increasing its offering in nuclear plant with focus on indigenization. With the signing of the MOU for development of secondary cycle system for 300 MW AHWR with BARC, BHEL has taken the lead to usher in the nation's third stage of Nuclear Power Plan. ●

## BHEL Make Electric Utility Installations

Coal, Gas, Nuclear, Diesel and Hydro Projects

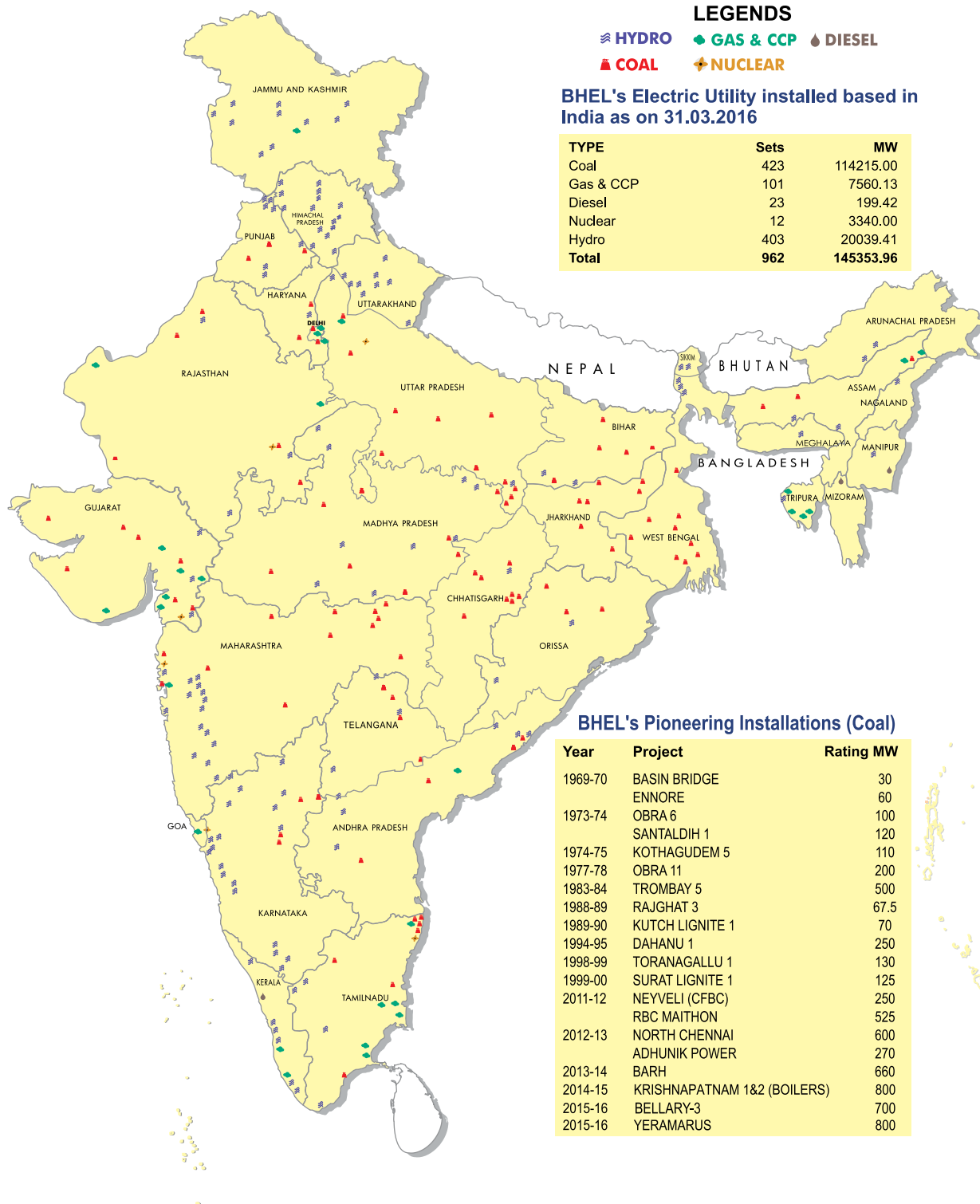
Commissioned as on 31.03.2016

### LEGENDS

HYDRO GAS & CCP DIESEL  
COAL NUCLEAR

BHEL's Electric Utility installed based in India as on 31.03.2016

TYPE	Sets	MW
Coal	423	114215.00
Gas & CCP	101	7560.13
Diesel	23	199.42
Nuclear	12	3340.00
Hydro	403	20039.41
<b>Total</b>	<b>962</b>	<b>145353.96</b>



### BHEL's Pioneering Installations (Coal)

Year	Project	Rating MW
1969-70	BASIN BRIDGE	30
	ENNORE	60
1973-74	OBRA 6	100
	SANTALDIH 1	120
1974-75	KOTHAGUDEM 5	110
1977-78	OBRA 11	200
1983-84	TROMBAY 5	500
1988-89	RAJGHAT 3	67.5
1989-90	KUTCH LIGNITE 1	70
1994-95	DAHANU 1	250
1998-99	TORANAGALLU 1	130
1999-00	SURAT LIGNITE 1	125
2011-12	NEYVELI (CFBC)	250
	RBC MAITHON	525
2012-13	NORTH CHENNAI	600
	ADHUNIK POWER	270
2013-14	BARH	660
2014-15	KRISHNAPATNAM 1&2 (BOILERS)	800
2015-16	BELLARY-3	700
	YERAMARUS	800



# Industry Sector

## 1.2.2 Industry Sector

Industry Sector segment of BHEL provides a comprehensive portfolio of products, systems and services for captive power plants, power utilities, oil and gas, metallurgical & mining and process industries such as cement, fertilizers, sugar and paper. Industry Sector operations provide complete solutions for captive power generation, transmission, transportation, renewable energy, water management, defence and other industrial products.

Design, manufacture, supply and services are offered for a broad range of systems and individual products, such as coal and gas-based captive power plants (including co-generating and combined cycle plants), industrial boilers and auxiliaries, waste heat recovery boilers, gas turbines, heat recovery steam generators, steam turbines and auxiliaries, pumps, HT motors, centrifugal compressors, drive turbines, oil rigs, wellheads and X-mas trees, transformers, reactors, switchgear, insulators, photovoltaic modules, water treatment plants, cryogenic systems, electric locomotives, track machines, electrical propulsion systems and others. Strategic equipment for defence forces is also part of the portfolio.

During the year, Industry Sector secured orders worth ₹ 5,125 Crore. This includes order for BHEL's highest rating solar PV plant of 50 MW. On capacity addition front, 653 MW of captive power projects and 40 MW of solar PV projects were synchronized during the year.

### 1.2.2.1 Transportation

#### Business Environment & Opportunities

- Railways has been identified as one of the major drivers for the country's growth with an investment plan of ₹ 8.50 lakh crore during the period 2015-19. Major thrust is being given to railways infrastructure projects. Three new Dedicated Freight Corridors (DFC) have been announced in the budget along with high speed rail corridor between Mumbai and Ahmedabad and plans for procurement of semi-high speed train sets. Due to growing urbanization, Mass Rapid Transit System (MRTS) for intra-city commutation is fast emerging as a key focus area for various state governments. 'Make in India' initiative is expected to open new stream of opportunities for Indian companies in association with global technology partners and OEMs.
- As per National Electric Mobility Mission Plan (NEMMP) 2020 projections, electric vehicle



market is expected to grow to 5-7 million units by 2020. BHEL is gearing up to play an important role in this market through in-house development of propulsion equipment and charging infrastructure.



### Offerings

BHEL provides electrical propulsion system and its controls to Indian Railways. BHEL supplied and installed IGBT propulsion equipment (traction converter/ auxiliary converter/ vehicle control unit (VCU)) account for more than 35% of IGBT based electric locomotives in operations by Indian Railways. BHEL has also developed IGBT propulsion equipment for Air Conditioned AC Electrical Multiple Units (EMUs) for Mumbai sub-urban transport. In diesel segment, BHEL has established itself as a supplier of alternators and traction motors for 3-phase Diesel Electric (DE) locomotives. Development of IGBT propulsion for DEMU and DE locos has also been taken-up. Propulsion system for electric mobility is also under development.

BHEL's key offerings include:

- **Rolling Stock**
  - Electric locomotives up to 5000 HP
  - Diesel-Electric shunting locomotives for industry and power plants
- **Traction Machines**
  - Traction motors - both AC & DC motors for locomotives & EMUs
  - Traction alternators – for locomotives & EMUs

- **Traction Drive System & Controls**
  - IGBT based Traction Power convertor Systems for electric locomotives & EMUs
  - Control gear equipment for AC Locomotives, EMUs, DEMU, DETC
  - Hotel Load Converter for Electric Locomotives
- **Traction Transformers**
  - Transformers - single phase & three phase for Electric Locomotive & EMU

### Achievements during the Year

#### Order Received

- As an endeavour towards 'Make in India', BHEL attained the regular supplier status for traction alternators Type TA 9901 for 4500 HP DE locomotive in March' 2015. This has resulted in import substitution for Indian Railways and saving of foreign exchange for the country. Order for 411 alternators was received from Diesel Locomotive Works (DLW), Varanasi accounting for more than 95% market share.
- Largest order for sixty one traction alternators type TA 10106 from DMW, Patiala.
- Largest value orders received from CLW, Chittaranjan for eighty-one 6531 kVA traction transformers. Order for twenty-two 7775 kVA transformers secured from Chittaranjan Locomotive Works (CLW), Chittaranjan subsequent to successful development & testing of prototype against developmental order.
- Largest order for 108 Auxiliary converters received from CLW.
- Major order for five 700 HP Diesel Electric Shunting Locomotives received from JSW Steel Limited, Bellary.
- Prestigious order for a 700 HP TPP standard Gauge Diesel Electric Shunting Locomotives received from M/s Ansaldo STS, Italy for Navi Mumbai Metro.

#### Other achievements

- Commissioning and movement trials done for India's first fully air-conditioned AC EMU Rake of 12 coaches at Integral Coach Factory (ICF), Chennai. The train is equipped with BHEL developed IGBT based propulsion system which includes Train Control Management System (TCMS).



Air-conditioned AC EMU built at ICF with BHEL's IGBT based Propulsion Systems for Central Railways

- Indigenously developed Hotel Load Converter for WAP5/WAP7 locomotives successfully commissioned on the locomotive at CLW, Chittaranjan. Subsequently trials of complete train including passenger coaches have been conducted at Royapuram Loco shed at Chennai.
- Type tests done successfully on newly developed 7775 kVA traction transformer for 6000 HP electric locomotive.

#### Preparing for Growth

- Collaborative and Indigenous development** - Joint development of IGBT based propulsion system including TCMS for air-conditioned AC EMUs has been carried out in association with Strukton, Netherlands to meet requirements of Indian Railways. Indigenous development of IGBT based propulsion equipment for DE locomotives is being carried out. Propulsion system for electric mobility is also under development at BHEL's R&D centre.
- Capacity Planning** - BHEL is gearing for manufacture and supply of 9000 HP electric locomotives & IGBT based WAG-9 locomotives at Jhansi works. To cater the upcoming demand of coaches (Metro/LRT/MRT/high speed trains etc.), BHEL has planned to augment facilities for coach manufacturing suitably.

#### 1.2.2.2 Transmission

#### Business Environment & Opportunities

- India is steadily upgrading its inter-state transmission networks to 765 kV voltage class. In future, there would be continued emphasis on 765 kV class HVAC and  $\pm 800$  kV HVDC to augment India's power transmission capacity.



Valve Hall at Agra converter station for  $\pm 800$  kV Multi-terminal NE-Agra HVDC Project

- With plans to build renewable capacity of 175 GW by 2022, there would be significant investments in grid stability systems such as FACTS (flexible AC systems), Static Compensators (STATCOM) and Energy Storage Systems (ESS). Evidently, need of the hour is a highly efficient, smart and intelligent power system laced with technologically advanced equipment and controls which are well-integrated with high-tech software and communication systems.
- Today country has about 300 GW of power generation capacity. However only 64% of the installed capacity is being utilized. Integrated Power Development Scheme (IPDS), Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY) & Ujwal Discom Assurance Yojna (UDAY) schemes are expected to give strong impetus to strengthening of power distribution in the country.

#### Offerings

- BHEL undertakes turnkey transmission projects from concept to commissioning on EPC basis which includes EHV & UHV substations/switchyard of both AIS and GIS types ranging from 33kV to 765 kV, HVDC converter stations up to  $\pm 800$  kV, Reactive Power Compensation Schemes, FACTS and power system studies.



765/400 kV substation commissioned by BHEL at Raichur, Karnataka

- Products manufactured by BHEL include power transformers, instrument transformers, dry type transformers, shunt reactors, vacuum and SF6 switchgear, gas insulated switchgears, ceramic and composite insulators, etc. Other major critical equipment such as capacitor banks, circuit breakers, control & protection equipment and thyristor valves are also in BHEL's manufacturing range.
- BHEL has indigenously developed and commercialized Gas Insulated Switchgear (GIS) up to 400 kV and transformers & shunt reactors up to 765 kV. The company has also developed & supplied 1200 kV CVT and 1200 kV auto transformer for the first 1200 kV test station in the country way back in 2012. BHEL has developed & tested 420 kN and 530 kN disc insulators for 1200 kV transmission lines. BHEL has a range of disc insulators for EHV and UHV AC/DC applications up to 1200 kV AC,  $\pm 800$  kV DC, solid core insulators up to 400 kV and hollow porcelain insulators up to 765 kV AC.
- BHEL has indigenously developed and executed schemes using FACTS devices like Fixed Series Compensation for 400 kV lines and Controlled Shunt Reactor (CSR) for dynamic reactive power management of long 400 kV transmission lines. BHEL has indigenously developed Phase Shifting Transformer (PST) for controlling and balancing power flow in 400 kV systems.

## Achievements during the Year

### Major Orders Received

- Order received from NHPC for 400 kV GIS bay at 3X180 MW Chamara-I HEP in Himachal Pradesh. This is the first commercial order for BHEL make 400 kV GIS.
- BHEL has been successful in attaining the highest market share of over 66% by securing three major orders out of five 765kV substations from PGCIL under stiff international competitive bidding for the National Green Energy Corridor project. These are:
  - o 765/400kV Banaskantha new substation and extension of 40kV Sankhari GETCO substation
  - o 765kV Ajmer & 765kV Chittorgarh substation extension package
  - o 765/400kV Bhuj new substation & extension of 765kV Banaskantha substation
- 261 power transformers & reactors totaling 30,386 MVA secured from various utilities and power generation & transmission companies
- 1952 VCBs/ 33 kV GIS - medium voltage switchgear from DISCOMs of UP, MP, AP, Chhattisgarh, HP etc.

### Milestone Achieved

- Designed, manufactured, tested and supplied twenty-eight 765 kV transformers and reactors for 3x660 MW Lalitpur Super Thermal Power Project & MEIL-Western UP system strengthening scheme. Out of these, twenty-one 765 kV 1-ph transformers and reactors were commissioned.
- Highest rated (26 kA) bus ducts, required for super critical sets, successfully type tested.
- Pole-1 of  $\pm 800$  kV, 6,000 MW Multi terminal NE-Agra HVDC project commissioned and power flow established in both directions.

### Preparing for Growth

- Demonstrated operational experience in indigenously developed & commissioned 765 kV transformers and reactors. BHEL is focusing on future market requirements in UHVAC and UHVDC segments.
- BHEL has successfully type tested 400kV, 40kA GIS. The first commercial order for 400kV GIS is under execution. BHEL is now ready to address the forthcoming GIS requirements up to 400kV.
- BHEL, having developed and supplied 400kV control shunt reactor and phase shifting transformers besides many fixed series compensation schemes for transmission utilities & STATCOMs for industry applications, is now ready to address forthcoming requirements for power quality improvement solutions.



400 kV AC yard for HVDC Agra converter station



### 1.2.2.3 Renewable Energy

#### Business Environment & Opportunities

India has a huge solar power potential. As part of clean climate commitments, Govt. of India has set up a target for deployment of 100 GW solar power capacities by 2022. This includes 60 GW of grid connected ground mounted solar power and 40 GW of rooftop solar power. Govt. of India has announced 34 solar parks to be developed in the next 5 years in 20 states with an aggregate capacity of around 20 GW (33 numbers are already sanctioned).

#### Offerings

BHEL offers EPC solutions from concept to commissioning for grid connected and standalone PV applications ranging from kW to MW sized plants which include supply of PV modules and Balance of System (BOS), Civil, E&C and O&M. BHEL manufactures space grade SPV modules and batteries in association with Indian Space Research Organisation (ISRO). All Indian satellites launched by ISRO are equipped with BHEL manufactured solar panels since 2002 and batteries since 2005.

#### Achievements during the year

##### Major Orders received

- 50 MW - NTPC Anantpur in AP
- 1 MW first canal top project from NREDCAP in AP



10 MW Grid connected solar power plant at NLC township, Neyveli commissioned by BHEL

- 50 MW - NTPC Mandsaur in MP



5 MW Grid interactive SPV plant commissioned for KPCL at Mandya, Karnataka

#### Projects Commissioned-SPV Plants

- 15 MW– GEDCOL
- 10 MW– KPCL, Mandya
- 10 MW – NLC, Neyveli
- 3 MW – Diu
- 1 MW – Daman
- 1 MW – ONGC, Rajahmundry

#### Preparing for Growth

BHEL is augmenting its manufacturing and execution capabilities to address emerging opportunities.

### 1.2.2.4 Water

#### Business Environment & Opportunities

Water segment market is expected to accelerate due to Government's emphasis on bridging the shortage of treated water, river cleaning programmes (like Namami Gange), accelerated urbanization (proposal for 100 Smart cities) and development of industrial corridors. As per recent government guidelines, new thermal power plants need to meet specific water consumption of 2.5 m<sup>3</sup>/MWh (max), achieve zero waste water discharge and use treated sewage water if the plant is located within 50 km of sewage treatment facilities.

#### Offerings

Complete water treatment solutions for power plants, industrial applications and other utilities with different treatment technologies that include:

- Pre Treatment plants (PT)
- Seawater Reverse Osmosis (SWRO) plants
- Demineralization (DM) plants
- RO plants for industrial applications



RO membranes of RODM plant commissioned by BHEL at RPCL Yeramarus

- Waste Water/ Effluent Treatment plants (WWTP)/ (ETP)
- Sewage Treatment plants (STP)
- Zero Liquid Discharge (ZLD) system

### Achievements during the year

- 96 MLD RWTP at OPaL Dahej successfully commissioned and put into operations.

### Preparing for Growth

BHEL has identified water segment as a potential business area and is gearing itself to address water segment business comprehensively. With a view to enhance its presence in the segment BHEL already has a long term Manufacturing Associate Agreement (MAA) with GE India Industrial Pvt. Ltd. for membrane based technologies.

#### 1.2.2.5 Defence

### Business Environment & Opportunities

Through 'Make in India' initiative Govt. of India is aiming at promoting self-reliance, indigenisation, technology enhancement, achieving economies of scale and developing capabilities for exports in the defence and aerospace sector. Govt. of India is promoting procurement of defence equipment through indigenous sources and has targeted to increase the indigenous procurement to 70% from current level of 30% over the next decade. The present business environment in the area is summarised as below:

- Defence Procurement Procedure (DPP) 2016 has been released by Ministry of Defence with specific provisions that will act as a growth stimulus to the domestic defence industry. In order to promote indigenous design and development of defence equipment, DPP 2016 has introduced the "Buy-IDDM (Indigenously Designed, Developed & Manufactured)" category of acquisition and accorded it the top most priority.

- Indian missile, space and UAV programme is poised for growth with enhanced cooperation between US and INDIA in defence and India's entry into Missile Technology Control Regime (MTCR).

### Offerings

BHEL has emerged as a reliable supplier of strategic equipment and services to Indian defence and para-military forces for over 20 years. BHEL in order to meet Indian defence requirements has set up large infrastructure which includes dedicated engineering & manufacturing facilities at various locations. Major products being manufactured by BHEL include Super Rapid Gun Mount (SRGM), strategic equipment for naval platform, Integrated Platform Management System for naval ships, Thermo-pressed components, Turret castings for T72 tanks, castings for ships and simulators.

### Achievements during the year

- Rate Contract for 76/ 62 SRGM spares signed with Indian Navy to provide long term product support.
- 76/62 SRGM and Auxiliary Control System (ACS) on-board INS Kochi, Kolkata class destroyer ship has been commissioned and handed over to Indian Navy.
- Integrated Factory Acceptance Test (IFAT) completed for Integrated Platform Management System (IPMS) for India's indigenous aircraft carrier P-71 Vikrant being built at Cochin Shipyard.



Super Rapid Gun Mount (SRGM) for Indian Navy under manufacturing at HEEP, Haridwar

### Preparing for Growth

Long term tie-up with Original Equipment Manufacturers (OEM's) is in place to cater to upcoming opportunities in the field of defence simulators and ship control (IPMS, ACS, etc.).

BHEL is associating itself with Defence Research and Development Organization (DRDO) and Defence PSU's for joint development of products / systems and business co-operation in areas of strategic equipment and aero derivatives of gas turbines.

In order to expand product portfolio, BHEL is taking initiatives in all the three areas of Float, Move and Fight categories of naval business which is summarised as:

- In addition to existing 76/62 calibre SRGM, BHEL has been identified as a production agency for 30 mm Naval Surface Gun (NSG). Order for supply of 118 NSG is expected to be finalized shortly.
- BHEL is identified as production agency for 127 mm Medium Calibre Naval Gun.
- BHEL is taking up indigenous manufacturing of marine gas turbines for propulsion and power for Indian naval ships.
- BHEL has initiated R&D for various equipment required for strategic products of Indian Navy.

#### 1.2.2.6 Captive Power Plants

##### Business Environment & Opportunities

Captive Power Plants (CPP) business has witnessed a downtrend in the last few years due to slowdown and demand shrinkage in industry. Initiatives from Govt. of India such as 'Make in India' and revival of fertilizer plants are expected to enhance business opportunities for CPP.

##### Offerings

- Steam turbine based CPP
  - STG/Boilers/BTG/EPC: unit rating upto 200 MW
  - Non-reheat upto 120 MW unit rating
  - Reheat upto 200 MW unit rating
- Gas turbine based CPP
  - GTG/HRSG/EPC: Fr-5 (26 MW) to Fr-9E (126 MW)
  - Open, Cogen & Combined Cycle

##### Achievements during the year

##### Major Orders received

- First order of reheat steam turbine in 70 MW range secured for 1x70MW STG - Nirma Limited
- 3x16.65 MW double-controlled extraction STG from Rohit Surfactant Private Limited
- 1x60 MW STG repeat order from M/s DCM Shriram Limited for Shriram Alkali & Chemicals, Bharuch Unit
- 1x93.6 MW STG order from RIL, Jamnagar
- 1x150 MW STG order from Megha Engineering Infrastructure Limited

- 1x41.65 MW STG order from Tata Steels Limited

##### Major Projects Commissioned

- 150 MW, Hindalco Industries Ltd. - Mahan Aluminium Unit-5



Unit 5 (150 MW) of HINDALCO Industries Ltd. – Mahan Aluminium commissioned by BHEL

- 150 MW, Hindalco Industries Ltd. - Aditya Aluminium Unit-5
- 150 MW, OPG Power Gujarat Pvt. Ltd. Unit-2
- 43 MW, Shyam SEL & Power Ltd., Jamuria STG
- 33.75 MW, ONGC Petro additions Ltd. (OPaL) GTG-4
- 30 MW, ONGC Petro additions Ltd. (OPaL) STG-1



33.75 MW GTG-4 captive power plant commissioned by BHEL for ONGC Petro additions Ltd. (OPaL)

- 30 MW, IOCL, Paradeep Refinery STG-2
- 30 MW, Tamil Nadu Newsprint & Paper Ltd. (TNPL) STG
- 23 MW, Paradeep Phosphate STG
- 13.5 MW, Brahmaputra Cracker and Polymer Ltd. STG

##### Preparing for Growth

As demand for CPP segment has seen a downtrend in recent years, new business opportunities in municipal solid waste based Waste to Energy (WTE) plants & washery rejects based power plants etc. are being explored.



## 1.2.2.7 Industrial Products (including Oil & Gas)

### Business Environment & Opportunities

- In oil & gas down-stream sector, there are proposals of refinery capacity expansion for more than 100 MMTPA in coming 5 to 10 years. The modernisation of refineries to Euro-VI norms by April 2020 is likely to yield business for compressors, fired heaters, pressure vessels, columns etc.
- In order to bridge the demand (31 MTPA) - supply (24.5 MTPA) gap of urea, Govt. of India has approved revival of Ramagundam fertilizer plant and proposed revival of various fertilizer units like FCI Sindri, Talcher, Gorakhpur & HFCL Barauni. Govt. of India's measures will result into new business opportunities for BHEL compressors with suitable drives and air separation units.
- The HT motor business of the company saw limited opportunities due to continued slowdown in its traditional markets of power, refineries and cement. Potential has however been seen in the irrigation sector where there is a growing requirement for HT machines due to renewed thrust on the same by central /state governments.

### Offerings

- **Oil Rigs** - A variety of on-shore drilling rigs with AC-VFD and AC-SCR technology for drilling up to depths of 9,000 metres, work-over rigs for servicing up to depths of 6,100 metres and mobile rigs for drilling up to depths of 3,000 metres. Besides complete rig package, BHEL also supplies on-shore drilling rig mechanical and electrical equipment such as draw works, mast & substructure, AC & DC PCR and motors, etc. Refurbishment of aged oil rigs is also done by BHEL.



2000 HP AC VFD Rig (EV 2000-1) at ONGC Rajahmundry (Andhra Pradesh) (Left) and E 1400-9 at ONGC Karaikal (Pondicherry) (Right)

- **Wellheads and X-mas Trees** - Up to 10,000 psi. mud line suspension, choke and kill manifold, CBM Wellheads, DSPM H- Manifold Assembly, mud valves, ESP hangers, block type X-mas trees

& landing bases for Casing heads.

- **Compressors** - Manufacturing and service of various types of multi stage centrifugal compressors as per API 617, flow up to 3,00,000 m<sup>3</sup>/hr & pressure up to 350 bar for application in fertilizers, refineries, petro-chemicals, pipelines, gas processing and steel industries, etc. BHEL has the capability to manufacture centrifugal compressors to handle all types of process gases.
- **Mechanical Packages** - Fabricated equipment like air separation units, cryogenic systems, column and reactors, pressure vessels, heat exchangers, fired heaters and purge gas recovery unit.
- **Electrical Machines** - AC squirrel cage, slip ring, synchronous motors (for safe and hazardous area application), variable speed motors, industrial alternators, special-purpose machines.

### Achievements during the year

#### Orders Received

- First heater package order from ONGC for modification at Hazira Plant, under Daman Development Project
- 262 Wellheads and 208 X-mas trees from ONGC
- Thirty-nine 3250-4570 kW, 24-36 pole, vertical induction motors with spares order from Xylem Water Solution India Pvt. Ltd. for SSNNL Lift irrigation scheme. This is the first time that BHEL will be supplying such slow speed induction motors and the order will help in consolidating BHEL motor presence in the Irrigation sector

#### Projects Commissioned

- 3 compressors (VGO, DHDT & DCU) with drive turbines/motors commissioned at IOCL Paradip Refinery
- one lean gas compressor & one Residue Gas compressor commissioned at Brahmaputra Cracker & Polymer Limited, Lepetkata
- Rich gas compressors commissioned at Brahmaputra Cracker & Polymer Limited, Duliajan
- one Residue Gas compressor commissioned at GAIL (India) Ltd, Vijaipur
- one propylene refrigerant compressor commissioned at GAIL (India) Ltd, Pata

### Preparing for Growth

BHEL is focusing on enhancing presence in irrigation sector which has growing requirement for motors for lift irrigation schemes. BHEL is also exploring new market segments in offshore and water drilling rig equipment. ●

# International Operations

## 1.2.3 International Operations

### 1.2.3.1 Our experience in exports

BHEL has led Indian engineering enterprises across the globe for over four decades. The company's export references encompass almost the entire range of BHEL's products and services, covering thermal, hydro and gas-based turnkey power projects, substation projects, rehabilitation projects, besides a wide variety of products like transformers, compressors, motors, valves, oil field equipment, electrostatic precipitators, photovoltaic equipment, insulators, heat exchangers, switchgears, castings and forgings, etc.

The cumulative installed capacity of power plants overseas with BHEL supplied equipment stands at close to 10 GW. The first large turnkey project export by an Indian company was executed by BHEL in Libya (1980) and since the past few decades, BHEL has been expanding its operations in the field of exports. Currently, the company has established references in 78 countries across the globe with major contributions in the power sector of various countries.

### 1.2.3.2 Orders Received

During the year, BHEL secured the following orders:

- BHEL successfully made its first entry into Belgium by securing an order for four 650 kW motors from Ensival Moret Belgium S.A., Belgium.
- Maiden entry into Mozambique by securing an order for 1300 kW motor from Cimentos de Mozambique Group, Mozambique.
- BHEL successfully revived business from Jordan after a gap of 9 years with the receipt of first ever order for motors from Jordan.
- **After sales service** – BHEL remains committed to offer quality and prompt after sales service to its customers. Orders have been received from different parts of the world including Bangladesh, Belarus, Bhutan, Ethiopia, Greece, Indonesia, Kazakhstan, Myanmar, Oman, Sri Lanka, Thailand, Uganda, UAE and USA for spares & after sales services.

## Global Footprints of BHEL

Presence in 78 countries around the world



### AFRICA

ALGERIA  
COMOROS  
DR CONGO  
EGYPT  
ETHIOPIA  
GHANA  
KENYA  
LIBYA  
MALAWI  
MAURITIUS  
NIGERIA  
RWANDA  
SENEGAL  
SOUTH AFRICA  
SUDAN  
SWAZILAND  
TANZANIA  
UGANDA  
ZAMBIA  
ZIMBABWE

### ASIA

AFGHANISTAN  
AZERBAIJAN  
BANGLADESH  
BHUTAN  
CHINA  
HONG KONG  
INDONESIA  
IRAN  
IRAQ  
JAPAN  
JORDAN  
KAZAKHSTAN  
KUWAIT  
LAOS  
MALAYSIA  
MYANMAR  
NEPAL  
OMAN  
PHILIPPINES  
SAUDI ARABIA  
SINGAPORE  
SRI LANKA

SYRIA  
TAIWAN  
TAJIKISTAN  
THAILAND  
UAE  
VIETNAM  
YEMEN

### EUROPE

BELARUS  
BELGIUM  
BULGARIA  
CYPRUS  
FINLAND  
FRANCE  
GEORGIA  
GERMANY  
GREECE  
IRELAND  
ITALY  
MALTA  
POLAND

ROMANIA  
RUSSIA  
SWEDEN  
SWITZERLAND  
TURKEY  
UKRAINE  
UK

### NORTH AMERICA

CANADA  
TRINIDAD AND TOBAGO  
USA

### OCEANIA

AUSTRALIA  
NEW CALEDONIA  
NEW ZEALAND  
SAMOA

### SOUTH AMERICA

SURINAME



### 1.2.3.3 Overseas Project Execution

- **4 x 125 MW Kosti - Largest thermal plant in Sudan inaugurated** - BHEL commissioned the last unit of the 500 MW Kosti Power Plant which is now the largest thermal power plant of Sudan. The plant was inaugurated by His Excellency Omer Hassan Ahmed El-Basheer, President of Sudan.



4x125 MW Kosti TPS, Sudan commissioned by BHEL on EPC basis

- **A Testimony to Indo-Belarus Friendship - BHEL supplied Co-gen Power Plant in Belarus-** BHEL supplied 1x126 MW Grodno-II Combined Heat and Power (CHP) Plant was jointly dedicated to the Republic of Belarus and its citizens by H.E. Mr. Pranab Mukherjee, Hon'ble President of India and H.E. Mr. Alexander Lukashenko, Hon'ble President of Belarus.



1x126 MW Grodno-II Combined Heat and Power (CHP) Plant supplied by BHEL dedicated to the Republic of Belarus

- **BHEL substation project inaugurated in Afghanistan** - BHEL has successfully commissioned yet another 220 kV substation project in Afghanistan. The Charikar & Doshi substations

were inaugurated by H.E. Dr. Abdullah Abdullah, CEO of Islamic Republic of Afghanistan along with H.E. Ambassador of India to Afghanistan Shri Amar Sinha.



220 kV Charikar & Doshi substation projects in Afghanistan commissioned by BHEL

### 1.2.3.4 Awards & Appreciation

- For the 25<sup>th</sup> consecutive year in succession, BHEL has been recognized by EEPC India for excellence in exports. BHEL has been conferred the 46<sup>th</sup> EEPC India National Award for the “**Star Performer Award 2013-14**” in the Project Group Project Exports Large Enterprise.



BHEL won EEPC's Top Export Award for the 25<sup>th</sup> consecutive year

- RUE Grodnoenergo, Belarus has appreciated the outstanding performance and operations of BHEL equipment installed in the recently dedicated 1x126 MW Grodno-II Cogeneration Project.
- BHEL's successful execution of the 2 x 14 MW Nyabarongo 1 Hydropower project, Rwanda has been applauded by the customer. BHEL's efforts were commended by President of Rwanda while inaugurating and dedicating the plant to the nation.



2 X 14 MW Nyabarongo 1 Hydro Power Project in Rwanda, commissioned by BHEL

- Electricity Generation Company of Bangladesh Ltd. has commended BHEL's timely support for supply of Exciter Armature for 2 x 120 MW Siddhirganj Peaking Power Station.

#### 1.2.3.5 Preparing for Growth

BHEL will continue to make efforts to strengthen its presence in target markets and expand the company's reach to newer destinations. With a view to sustain the growth momentum in exports amidst highly volatile and uncertain market conditions, the export strategy is being recalibrated with an increased focus on partnerships and after sales service. ●

## 1.3 Financial Performance of the Company

### 1.3.1 Standalone Financial Results

#### 1.3.1.1 Balance Sheet

##### Share Capital

(₹ in Crore)

	As at 31-03-2016	As at 31-03-2015
Authorised Share capital	2000	2000
Issued, subscribed & Paid up Share Capital	490	490

Govt. shareholding remained at same level at 63.06%.

##### Reserves & Surplus

(₹ in Crore)

	As at 31-03-2016	As at 31-03-2015
Capital Reserve	36	36
General Reserve	32350	32350
Surplus of Profit & Loss	178	1209
	32564	33595

The reduction in 'Surplus of Profit & Loss' is due to loss in current FY 2015-16.

##### Borrowings

(₹ in Crore)

	As at 31-03-2016			As at 31-03-2015		
	Long Term	Short Term	Total	Long Term	Short Term	Total
Unsecured Loans- Financial lease obligation	126	0	126	61	0	61
	126	0	126	61	0	61

Increase in Financial lease obligation is mainly due to fresh procurement of EDP equipment during the year 2015-16 on Finance lease.

#### Other Long Term / Current Liabilities

(₹ in Crore)

	As at 31-03-2016			As at 31-03-2015		
	Other Long Term Liabilities	Current Liabilities	Total	Other Long Term Liabilities	Current Liabilities	Total
Trade payables (Incl. Acceptances)	787	8702	9489	702	8799	9501
Deposits from contractors & others	125	529	654	94	517	611
Advances Received from customers & others	3676	6711	10387	4563	6969	11532
Other payables/ liabilities	0	1540	1540	0	1637	1637
	4588	17482	22070	5359	17922	23281

Decrease in liabilities (both current & non-current) is mainly due to decrease in advances from customers.

##### Provisions

(₹ in Crore)

	As at 31-03-2016			As at 31-03-2015		
	Long Term	Short Term	Total	Long Term	Short Term	Total
Provision for employee benefits	2989	587	3576	2706	574	3280
Provision for contractual obligation	4524	1630	6154	3598	2511	6109
Proposed Dividend (Incl. Div. tax)	0	118	118	0	183	183
Other Provisions	440	1064	1504	453	952	1405
Provision for CSR	33	56	89	45	18	63
	7986	3455	11441	6802	4238	11040



Increase in total provisions is mainly due to marginal increase in provision for employees benefits.

### Fixed Assets

(₹ in Crore)

	As at 31-03-2016	As at 31-03-2015
Gross Block	13298	12589
Less: Depreciation/ amortisation	9336	8450
Less: Lease Adjustment Account	(2)	(2)
Net Block	3964	4141
Capital Work-in-Progress	307	500
Intangible assets under development	8	17
	4279	4658

### Non Current Investments

(₹ in Crore)

	As at 31-03-2016	As at 31-03-2015
Long Term Trade Investments	663	418

The Increase in long term trade investments is mainly due to additional investment in existing JV during FY 2015-16.

### Deferred Tax Assets (Net)

(₹ in Crore)

	As at 31-03-2016	As at 31-03-2015
Deferred Tax Assets (Net)	3135	2221

The net increase in Deferred Tax Assets is mainly on account of items of expense which are in the nature of timing difference.

### Loans & Advances

(₹ in Crore)

	As at 31-03-2016			As at 31-03-2015		
	Long Term	Short Term	Total	Long Term	Short Term	Total
Loans & Advances	900	2265	3165	1219	2221	3440

The decrease in loans & advances is mainly on account of reduction in advances for purchases.

### Inventories

(₹ in Crore)

	As at 31-03-2016	As at 31-03-2015
Inventories	9637	10105

The reduction in inventory is mainly on account of reduction in finished goods.

### Receivables

(₹ in Crore)

	As at 31-03-2016			As at 31-03-2015		
	Long Term	Trade Receiva- bles	Total	Long Term	Trade Receiva- bles	Total
Trade Receivables (Net)	11174	24429	35603	11414	26224	37638

The decrease in receivables is on account of operational efficiency.

### Cash and bank balances

(₹ in Crore)

	As at 31-03-2016	As at 31-03-2015
Cash & bank balances	10086	9813

### Other Current Assets

(₹ in Crore)

	As at 31-03-2016	As at 31-03-2015
Other Current Assets	122	175

Other current assets represent interest accrued on bank deposits.

### 1.3.1.2 Statement of Profit and Loss

#### Revenue from Operations

	(₹ in Crore)	
	2015-16	2014-15
Gross Turnover	26587	30947
Less : Excise Duty	959	920
Less : Service Tax and Cess	490	485
Revenue from operations (Net)	25138	29542

In the year 2015-16, Power segment and Industry segment contributed 78% and 22% respectively for the total revenue of the company as against 77% and 23% last year.

#### Other Operational Income

	(₹ in Crore)	
	2015-16	2014-15
Export Incentive	34	100
Scrap Sales	159	244
Others	299	356
	492	700

Decrease in other operational income is in line with level of operations.

#### Other Income

	(₹ in Crore)	
	2015-16	2014-15
Exchange variation (net)	356	0
Interest Income	763	811
Others	331	409
	1450	1220

The increase in other income is mainly due to exchange variation gain (net) in 2015-16 as against exchange variation loss (net) in 2014-15 (loss shown under other expenses of Manufacturing, Administration, Selling & Distribution).

#### Cost of Material consumption, Erection & Engineering Expenses

	(₹ in Crore)	
	2015-16	2014-15
Cost of consumption of raw material & components	13002	13704
Consumption of stores & spares	422	472
Erection & Engineering Expenses	2974	3582
	16398	17758

#### Employee Benefits Expenses

	(₹ in Crore)	
	2015-16	2014-15
Employee Benefits Expenses	5541	5450

#### Finance Costs

	(₹ in Crore)	
	2015-16	2014-15
Interest and other borrowing costs	27	92

Reduction in Finance cost is in line with borrowings.

#### Other Expenses of Manufacturing, Administration, Selling & Distribution

	(₹ in Crore)	
	2015-16	2014-15
Other expenses of Manufacturing, Administration, Selling & Distribution	3031	3696

Decrease in other expenses is mainly due to exchange variation loss (net) considered in other expenses in 2014-15 as against exchange variations gain (net) shown under Other Incomes in 2015-16.

#### Provisions (Net)

	(₹ in Crore)	
	2015-16	2014-15
Provisions (Net)	2455	1604

Increase in provisions is on account of creation of provisions as per guidelines (including guidelines for hold projects) in line with applicable accounting standards.

#### Depreciation

	(₹ in Crore)	
	2015-16	2014-15
Depreciation	936	1077

The depreciation in 2015-16 is lower than 2014-15 mainly due to impact of revised depreciation policy taken in 2014-15.

## Tax Expense

(₹ in Crore)

	2015-16	2014-15
Income Tax-Current Year	356	1005
-Earlier Years	(5)	(54)
Deferred tax charge/ (credit)	(914)	(230)
Tax Expenses (Net)	(563)	721

The tax expense (net) credit is on account of increase in deferred tax assets in line with accounting standard-22.

## Profit after Tax

(₹ in Crore)

	2015-16	2014-15
Profit/(Loss) after Tax	(913)	1419

## 1.3.2 Financial Review of Subsidiary Company

### BHEL Electrical Machines Ltd.

A subsidiary company was incorporated on 19th January 2011 as "BHEL Electrical Machines Ltd", with BHEL holding the majority stake of 51% with an equity investment of ₹ 5.36 Crore and Govt. of Kerala retaining 49%. In 2015-16, BHEL EML recorded a turnover of ₹ 40.96 Crore with a loss of ₹ 2.98 Crore.

(₹ in Crore)

Particulars	2015-16	2014-15
BHEL's Investment in Equity	5.36	5.36
Turnover	40.96	21.88
Profit/(Loss) after Tax	(2.98)	(3.96)

## 1.3.3 Financial Review of Joint Venture Companies

### a. BHEL-GE Gas Turbine Services Pvt. Ltd. (BGGTS)

BGGTS is a Joint Venture Company of BHEL and GE, USA formed to take up repair & servicing of GE designed Gas Turbines. The financial

highlights of the company are as under:

(₹ in Crore)

Particulars	2015-16	2014-15
BHEL's Investment in Equity	2.38	2.38
Orders booked during the year	595.10	506.90
Turnover	566.23	592.70
Profit After Tax	59.36	68.70
Net Worth	240.60	221.91

For the year 2015-16, BGGTS has paid interim dividend at 690% and proposed final dividend of 20% on the equity share capital of ₹ 4.76 Crore.

### b. NTPC BHEL Power Projects Private Limited (NBPPL)

BHEL along with NTPC Limited has promoted a joint venture company "NTPC- BHEL Power Projects Private Limited" for carrying out EPC contracts for Power Plants and other infrastructure Projects in India and abroad. The JVC has set up a manufacturing facility for Balance of Plant (BoP) equipment at Mannavaram in Andhra Pradesh.

The financial highlights of the company are as under:

(₹ in Crore)

Particulars	2015-16*	2014-15
BHEL's investment in equity	50.00	50.00
Turnover	809.87	588.60
Profit/ (Loss) after Tax	(45.86)	1.66

\* based on provisional unaudited figures

### c. Raichur Power Corporation Limited (RPCL)

BHEL has promoted a Joint Venture company by the name of "Raichur Power Corporation Limited" with Karnataka Power Corporation Limited (KPCL) for setting up of a 2x800 MW supercritical thermal power plant at Yeramarus, Raichur, Karnataka and 1x800 MW supercritical thermal power plant at Edlapur, Raichur, Karnataka on build, own and operate basis. The paid up equity capital as on 06.06.2016 is ₹ 2155.34 Crore with contribution of ₹ 1133.30 Crore from KPCL, ₹ 589.32 Crore from BHEL and ₹ 432.72 Crore from IFCL.



The financial highlights of the company are as under:

(₹ in Crore)

Particulars	2015-16*	2014-15
BHEL's Investment in Equity	589.32	331.52
Net Block	136.82	106.20
Capital Work in Progress (including advances for Capital expenditure)	10598.45	9065.22

\* based on provisional unaudited figures

**d. Dada Dhuniwale Khandwa Power Limited (DDKPL)**

BHEL has promoted a Joint Venture company by the name of "Dada Dhuniwale Khandwa Power Limited" with Madhya Pradesh Power Generating Company Limited. (MPPGCL) for setting up of a 2x800 MW supercritical thermal power plant at Khandwa, Madhya Pradesh on build, own and operate basis. Due to non-availability of coal linkage and problems being faced in land acquisition, both the promoters have approved for voluntary winding up of the JVC.

(₹ in Crore)

Particulars	2015-16*	2014-15
BHEL's Investment in Equity	22.50	22.50
Net Block	0.01	0.01
Capital Work in Progress	9.79	13.36

\* based on provisional unaudited figures

**e. Latur Power Company Limited (LPCL)**

BHEL had promoted a Joint Venture company by the name of "Latur Power Company Limited" with Maharashtra State Power Generation Company Limited (MAHAGENCO) for setting up a 2x660 MW thermal power plant or 1500 MW gas based Combined Cycle Power Plant (CCPP) in Latur, Maharashtra.

Due to non availability of coal linkage and domestic gas, both the promoters (BHEL and MAHAGENCO) had approved for voluntary winding up of the JVC. The JVC is under liquidation.

**f. Powerplant Performance Improvement Limited (PPIL)**

The Joint Venture company, Powerplant Performance Improvement Private Limited (PPIL), had been promoted by BHEL with Siemens,

Germany for plant performance improvement of old fossil fuel power plants.

Since sufficient business to ensure viability of the company has not been forthcoming, the promoter partners have mutually agreed to gradually wind up the company. The process of winding up of the JVC would be initiated after closure of one pending contract.

### 1.3.4 Consolidated Financial Statement (CFS)

Consolidated Financial Statements have been prepared in accordance with Accounting Standard - 21 on "Consolidated Financial Statements" and Accounting Standard - 27 on "Financial Reporting of Interest in Joint Ventures."

A summary of the results on financial performance in line with the aforementioned Accounting Standards are as under:

(₹ in Crore)

Statement of Profit and Loss	2015-16	2014-15
Turnover	27314	31555
Profit / ( Loss) Before Tax	(1446)	2187
Profit / ( Loss) After Tax	(896)	1452

Balance Sheet	As at 31.03.2016	As at 31.03.2015
<b>Sources of Funds</b>		
Shareholders fund	33172	34207
Minority Interest	1	2
Non current liabilities	15039	13910
Current liabilities	21432	22727
<b>Total</b>	<b>69644</b>	<b>70846</b>
<b>Application of Funds</b>		
Net Block (incl. CWIP)	7245	6843
Non Current Investments	6	6
Deferred Tax Assets	3146	2230
Other Non current assets	12196	12726
Current Assets	47051	49041
<b>Total</b>	<b>69644</b>	<b>70846</b>

## 1.4 Capital Investment

BHEL invested ₹ 311 Crore during the year in the company's assets with focus on indigenization, capability building and productivity enhancement. The highlights of capital investment include:

- Augmentation of manufacturing capacity for SPV cell to 105 MW and for modules to 226 MW. BHEL has established 1.5 MWp grid connected solar photovoltaic power plant for captive use at Hyderabad manufacturing plant. After this addition, BHEL is operating two solar power plants totaling to 6.5 MWp capacity and further one more 5.0 MWp grid connected solar photovoltaic power plant is under installation at Tiruchirappalli unit.



1.5 MWp grid connected solar photovoltaic power plant established for captive use at HPEP, Hyderabad

- Commissioned weld overlaying system for HP & IP rotor shafts of supercritical thermal sets (660/700/800 MW) at BHEL Haridwar as part of indigenization of supercritical technology. With this system, weld overlaying operations of low alloy weld metal at bearing journal area of rotors can be carried out at BHEL Haridwar. The facility will obviate the dependence on foreign suppliers for supply of weld overlayed rotors and will save substantial foreign currency, bringing in cost advantage to the supplied products.



Weld Overlaying System for HP & IP rotor shafts commissioned at HEEP, Haridwar

- To leverage BHEL's leading position in gas turbine manufacturing and to pursue likely business opportunities in the area of repair and maintenance of large sized gas turbines up to model Fr-9FA, gas turbine rotor repair facilities have been established at BHEL Hyderabad. Similar facilities were hitherto not available in India and all repair works used to be outsourced to other countries.
- With a focus on continuous improvement of manufacturing process and quality of power transformers, working environment of transformer winding area has been further upgraded for temperature and humidity control at Bhopal unit. Static Drive for testing of higher rating of power transformers has also been introduced at BHEL Bhopal, where it is crucial to maintain form factor and control the harmonics in the input test power.
- BHEL is establishing sewage treatment plants at Hyderabad and Tiruchirappalli units with the ultimate aim of zero discharge. These plants will be equipped with the latest membrane bio-reactor (MBR) technology and will ensure zero discharge of industrial effluents.

## 1.5 Quality Performance

"In its quest to be global engineering enterprise, BHEL pursues continual improvement in the quality of its products, services and performance leading to customer delight through commitment, innovation and team work of all employees".

To realise the aforementioned policy, standardisation of quality management systems and enhancement of their efficacy are being taken up.

Major thrust is being given to Root Cause Analysis (RCA) of quality issues faced at manufacturing shops and erection sites. Intra-unit standing RCA committees and inter-unit special RCA committees analyse the quality issues and recommend corrective/ preventive actions. RCA findings are shared with customers to gain their confidence. RCA initiative has been institutionalized in the organization and the findings are reviewed by top management regularly.

Centralised online systems are established to capture and resolve quality issues raised during installation as well as customer complaints raised after commissioning. Data captured through online systems are used for carrying out RCA.

BHEL's journey to ISO 9001 certification started in 1991 and presently thirty divisions of BHEL are ISO 9001:2008 Quality Management System certified.

The Quality Management maturity level of 20 BHEL divisions (manufacturing units, engineering centres & PS-regions) are assessed as per Quality Management Effectiveness Review (QMER), a copyright model of BHEL. Gaps are bridged by drawing action plans every year for every unit. To strengthen the existing quality systems, periodic quality audits comprising cross functional teams of corporate quality members and other representatives are being conducted. Action plans based on the identified gaps are prepared & followed up for implementation.

Capability building of employees in quality management through various training programs, awareness sessions, and workshops is the strength of BHEL. In 2015-16, 735 executives were trained on quality management and 110 executives qualified as CII Certified Quality Professional (CCQP) apart from routine training programs at unit level.

Quality Circle (QC) movement in BHEL which is being driven by workmen & supervisors is the role model in our country. Every year, inter-unit annual QC summit is being held in BHEL where the QCs showcase their case studies. In 2015-16, BHEL Annual Quality Circle Summit (BAQCS) was held at BHEL Hyderabad where 46 QCs participated from all over BHEL and QC no.

TC69M of HPEP Hyderabad was awarded the S R Udupa Trophy for "Best Quality Circle".

Quality efforts of BHEL are being regularly appreciated by domestic & international customers. Appreciations have been received for successful synchronization & capacity addition of power plants as well as for commissioning of industrial equipment from customers like Sudanese Thermal Power Generating Company, Singareni Collieries Company Ltd, KPCL, RPCL, ONGC Petro-additions Ltd., etc. In the field of services after sales, appreciations have been received from different government & private customers like Hinduja National Power Corp Ltd, Jindal Power, NTPC-KBUNL, NTPC-Faridabad, NTPC-Koldam, JSPL Angul, NHDC, THDC, Punjab State Power Corp Ltd, NTPC-Rihand, NTPC-Talcher, Uttar Pradesh Rajya Vidyut Utpadan Nigam Ltd., DVC-Bokaro, RUPPL-Hazira, IOCL-Bongaigaon refinery etc.

## 1.6 Human Resource Management

### 1.6.1 Learning and Development

Learning and development are accorded utmost importance in BHEL. The Human Resource Development Institute (HRDI) along with Advanced



Setting sights high : CMD, BHEL with young employees at HEEP, Haridwar



Technical Education Centre (ATEC) at Hyderabad and Human Resources Development Centre (HRDCs) at different units, play a key role in the same. Aligned to the changing needs of the organization, these learning centers facilitate knowledge transfer, skill development and behavioral interventions to build winning attitude in BHEL employees.

During the year, the company achieved 4.18 training mandays per employee. BHEL also provided skill development to various Act-apprentices thus contributing actively to the 'Skill India' campaign of Govt. of India. BHEL as member of governing body of Capital Goods Sector Skill Council and Power Sector Skill Council was involved in creation of national occupational standards for these two sectors. During the year, live class room facilities were introduced at some of the locations to gain virtual access to live classes being conducted at a different locations to improve the reach and sharing of knowledge.

The highlights of learning and development in BHEL during 2015-16 include:

- Revision of content, design and methodology for leadership development programmes
- Introduction of new leadership program titled "Resilient Leadership" for middle management to face the Volatility, Uncertainty, Complexity, Ambiguity (VUCA) world and covered 110 executives in 4 programs with exposure to outbound methodology
- Conceptualization of program to enhance belongingness for the organization titled 'Winning Together' for young executives and covering 2,928 executives in more than 100 programs across the organization with the help of 75 internal trainers specifically trained for this initiative
- Thrust on technical training on new advanced technology areas like AUSC, IGCC, carbon capture, solar nergy, transmission business etc.
- Successful launch of 'Horizon & Inspire' for cadre change promotions
- Successful implementation of e-learning modules of
  - o Harvard Manage Mentor leadership for 1000 executives and
  - o In-house developed project management module covering 500 executives
- Launch of online Training Need Identification(TNI) portal across the organization

The different initiatives undertaken by HRDI have brought the following laurels to the organization in 2015-16:

- **11<sup>th</sup> BML Munjal Award** for 'Business Excellence through Learning and Development' for the year 2016



*BHEL won the 11<sup>th</sup> BML Munjal Award for 'Business Excellence through Learning and Development'*

- **Top Case Study Award at the SCOPE International HR Summit, 2016** for developing and implementing an online Training Need Identification tool across the organization
- **1<sup>st</sup> Runners Up Trophy in NHRDN 3<sup>rd</sup> L&D Summit, October 2015** in Case Study Competition (Leveraging Technology for Large Scale Intervention - Winning Formula for Business), where BHEL's e-learning initiatives were highly appreciated

### 1.6.2 Performance and Career Development

Under the people development initiatives, BHEL executives have gone through technical competency assessments. Assessment of individual executives was conducted at major units and regions. Competency gaps have been identified for desired vis-a-vis possessed levels. These competency gaps have been used for inputs for an in-house developed Training Needs Identification module (TNI) and are translated into development programmes through company's training institutes/centres.

As regard to assessment of behavioral competencies, around 2000 executives have been assessed through SHL psychometric tool. Based on the results of the SHL psychometric tool, individual development plans are available for all executives who have further prepared a time-bound action plan for their developmental areas.

To prepare and align young employees to face company's challenges and to encourage healthy

competition, initiatives like 'Best Employee of the Quarter' and 'High Potential (HiPo) Employees Scheme' have been initiated. Under the HiPo scheme, 210 HiPos have been identified amongst the mid-level executives. The grooming process for such executives, as envisaged in the scheme has been initiated in the Units. In 'Best Employee of the Quarter' scheme, 1200 applications were received during the year and 320 awards have been given in different categories.

#### **Disclosure under section 134 (3)(p) of the Companies Act**

As per Section 134 (3)(p) of the Companies Act 2013, the Board's Report of a Listed Company shall include a statement indicating the manner of formal annual evaluation of Board, Individual Directors etc. The MoU signed between the company and the Govt. of India details out the parameters and initiatives that the company is required to undertake during that financial year. This MoU is evaluated at the end of the year by the Govt. and a performance rating is assigned to BHEL based on its performance on the spelt out parameters. The terms of reference of Board Level Committees are approved by the Board. The minutes of Board Level Committees are placed before the Board for its perusal. Further, there is a well laid down procedure for evaluation of CMD and Functional Director's performance. Department of Public Enterprises (DPE) has designed a format and laid down a procedure for filling up and evaluation of the Director's performance. As soon as the concerned Director does self assessment, his evaluation is done next by CMD, then by Secretary, Heavy Industries and closed by the Minister-in-Charge. The tenure of Functional Directors as spelt out in their Terms and Conditions of Appointment is five years or the date of their superannuation, whichever is earlier.

As per Schedule IV of the Companies Act, 2013, on the basis of performance evaluation of Independent Directors, it shall be determined whether to extend or continue their term of appointment. Since the appointment of the Independent Directors is decided by the Govt of India and as the tenure of Independent Directors is normally for a period of three years, also as decided by the Govt. of India, the Board is not in a position to decide their continuance or otherwise on the basis of performance evaluation. Ministry of Corporate Affairs has vide its notification dated 5<sup>th</sup> June, 2015 notified the Exemptions to Government Companies from the provisions of the Companies Act, 2013 which inter-alia provides that Sec. 134(3) (p) regarding statement on formal annual evaluation shall not apply to Government Companies in case

the Directors are evaluated by the Ministry which is administratively in-charge of the company as per its own evaluation methodology. Further, in line with aforementioned exemptions, Sub-Sections (2), (3) & (4) of Sec. 178 regarding appointment, performance evaluation and remuneration shall not apply to Directors of Government Companies.

#### **1.6.3 Industrial Relations**

The Industrial Relations scenario in the various manufacturing units and the business sector/offices of the company remained harmonious and peaceful during the year 2015-16. No mandays were lost during the year.

The thrust on participative culture and communication continued during the year. Two meetings of the apex level bipartite forum, namely "The Joint Committee for BHEL" were held during the year. There were 57 meetings of the Plant Councils and 464 meetings of the Shop Councils. In addition, meetings were also held with the representatives of executives and supervisors of the various manufacturing units including the business sector/offices.

The focus of discussions in the various fora centered on improvement of the overall performance of the company. The main thrust was on the issues related to increasing the productivity of the employees, cost reduction, quality and sequential delivery in order to meet the customer commitments.

#### **1.6.4 Manpower Strength**

The manpower strength of the company as on 31.03.2016 was 42,198.

#### **1.6.5 Status on Presidential Directives**

##### **1.6.5.1 Directives on reservation policy for reserved category persons**

Presidential Directives on reservation policy issued by Govt. of India from time to time provide for certain percentages of reservation in direct recruitment as well as promotion in specified posts and for specified reserved category of candidates, i.e. SCs, STs, OBCs and Physically Challenged. Besides, the Directives also contain provision of certain concessions and relaxations in direct recruitments, promotions and reservation for housing for specified category of employees. The Presidential Directives on the subject from time to time are being strictly complied with and reservation percentages are ensured

through maintenance of post based roster system as prescribed by Govt. However, there is no direct impact of these guidelines on the financial position of the company.

Other relevant information on the subject mentioned aforementioned is furnished below for inclusion in the Director's Annual Report 2015-2016:

1. Representation of SC/ST employees

The overall representation of SC/ST/OBC employees in total manpower was 20.07%, 6.43% and 29.31% for SCs, STs and OBC respectively as on 31/12/2015. However, the percentages in direct recruitment during the year are 20.00% for SCs and 50% for OBCs.

The Annual Statement in the prescribed format showing the representation of SCs, STs and OBCs as on 31/12/2015 and number of appointments made during the preceding calendar year, as furnished to the Govt. of India, is given at **Annexure - A**.

2. Manpower strength of physically challenged employees as on 31/12/2015

As on 31/12/2015, the company has a total of 916 physically challenged employees in BHEL. The group wise manpower strength of physically challenged employees in the company as on 31/12/2015 is given at **Annexure - B**.

### 1.6.5.2 Safeguard of Women at Workplace

An Act to provide protection against sexual harassment of women at workplace and for the prevention and redressal of complaints of sexual harassment and for matters connected therewith or incidental thereto called "The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013", has come into force from 9th December 2013 with notification of rules by Govt. of India, Ministry of Women and Child Development called "The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Rules, 2013".

The provisions of the Act and the rules thereon are being strictly complied with. In accordance with the Act, Internal Complaints Committee has been constituted in all units of BHEL and their constitution and contact details have been hosted on unit's website. A poster has been designed, which includes key provisions of the Act, Duties of the Employer, Complaints Redressal Mechanism, Action for Malicious Complaints &

various misconceptions about sexual harassment and the same was circulated to all units for display at conspicuous places. Posters in Hindi, English and Regional languages have been displayed in all units. 45 workshops / awareness programmes were conducted in units on gender sensitization, self defence and on awareness about the Act. The Annual Report showing details on number of complaints of sexual harassment received during the year 2015-2016 and status thereof as on 31.03.2016 is given at **Annexure - C**.



**Annexure - A****Annual Statement Showing the Representation of SCs, STs and OBCs as on 31/12/2015 and No. of appointments made during the preceding calendar year**

Groups	Representation of SCs/STs/OBCs (As on 31/12/2015)				No. of appointments made during the calendar year 2015											
					By Direct Recruitment				By Promotion*			By Deputation/ Absorption				
	Total No. of Employees	SCs	STs	OBCs	Total	SCs	STs	OBCs	Total	SCs	STs	Total	SCs	STs	OBCs	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Group A	13310	2177	916	2749	4	1	0	2	0	0	0	1	0	0	0	
Group B	8886	1665	513	1645	1	0	0	0	0	0	0	0	0	0	0	
Group C	19806	4568	1301	7877	4	1	0	2	0	0	0	0	0	0	0	
Group D (Excl. SW)	732	134	19	270	1	0	0	1	0	0	0	0	0	0	0	
Group D (SW)	50	41	1	1	0	0	0	0	0	0	0	0	0	0	0	
Total	42784	8585	2750	12542	10	2	0	5	0	0	0	1	0	0	0	

\* In BHEL, no appointments are made at induction level by promotion.

**Annexure - B****Representation of the persons with Disabilities as on 31/12/2015**

Groups	Number of Employees (Representation)				Direct Recruitment (During the calendar year 2015)								Promotion*							
	As on 31/12/2015				No. of Vacancies Reserved			No. of Vacancies Made (appointed)					No. of Vacancies Reserved			No. of Vacancies Made (appointed)				
	Total	VH	HH	OH	VH	HH	OH	Total	VH	HH	OH	VH	HH	OH	Total	VH	HH	OH		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
Group A	13310	6	18	207	0	0	0	4	0	0	0	----- NA -----								
Group B	8886	6	15	171	0	0	0	1	0	0	0									
Group C	19806	24	35	415	0	0	0	4	0	0	0									
Group D	782	1	5	13	0	0	0	1	0	0	0									
Total	42784	37	73	806	0	0	0	10	0	0	0									

Note: (i) VH stands for Visually Handicapped (persons suffering from blindness or low vision)

(ii) HH stands for Hearing Handicapped (persons suffering from hearing impairment)

(iii) OH stands for Orthopaedically Handicapped (persons suffering from locomotor disability or cerebral palsy)

\* There is no reservation in promotion from Group C to B, Group B to A and within Group A. In BHEL within Group C & D, except in cadre change promotion, seniority-cum-merit promotion policy is followed, wherein all employees on completion of prescribed eligibility period in a Grade and subject to attaining satisfactory levels in conduct and performance are promoted to the next higher grade.

## Annexure - C

### Annual Report on Safeguard of Women at Workplace

1	Number of complaints received during the year 2015-16	4
2	Number of complaints disposed off during the year 2015-16	4
3	Number of cases pending for more than ninety days	0
4	Number of workshops or awareness programme against sexual harassment carried out	45
5	<b>Nature of action taken by the employer on recommendations of ICC</b>	
	• Aggrieved woman was upset about the dual meaning comments from her colleagues on her married life and wanted transfer from that product group. She was transferred and the case closed.	Case closed
	• On inquiry, ICC concluded that this was not the case of harassment as per the Act. On the request of aggrieved woman to drop the case, case was closed	Case closed
	• According to the aggrieved woman, respondent had unauthorised information about her personal mail ids and used to send derogatory remarks to her spouse using fake e-mail ids. Case investigated by ICC, respondent submitted written apology and transferred from the unit.	Case closed
	• On inquiry, ICC concluded that as per the Act, the case was not of sexual harassment but was of misconduct and recommended the case for departmental inquiry.	Case closed

### 1.7 Right To Information Act, 2005

BHEL is a front-runner in implementing the Right to Information Act, 2005 (the 'Act') and has embraced the Act in true letter and spirit.

- A Central Public Information Officer (CPIO) and a Central Assistant Public Information Officer (CAPIO) aided by a Dy. Manager (Law) at the company level and 21 CPIOs at each of the major administrative units are functioning as part of the Right to Information Group.
- 21 Appellate Authorities are functioning at the company level to dispose of first appeals filed under the Act.
- To assist and facilitate the citizens in obtaining information, detailed guidelines have been placed on BHEL's website, spelling out the procedure for securing access to information and filing of first appeals under the Act.
- Instructions have been issued to administrative units to ensure compliance to the mandatory requirements of the Act.
- Proactive disclosures have been made on BHEL's website in line with Section 4 (1) (b) of the Act, disseminating various categories of information so that citizens have minimum need to resort to the Act for the purpose of obtaining information.
- BHEL is an active member of Steering Committee on RTI constituted by Standing Conference of Public Enterprise (SCOPE).

- BHEL has adopted the RTI online web portal of Department of Personnel & Training, Govt. of India. The RTI Applications/Appeals filed on this web portal are received electronically in BHEL.
- The CPIOs and the other stakeholders involved are sensitised regularly about their obligations under the Act through various trainings and workshops. BHEL organized its annual workshop on the Act on 11.3.2016 for the benefit of all the CPIOs and First Appellate Authorities. The keynote address was delivered by Prof (Dr.) M M Ansari, Former Central Information Commissioner.
- BHEL received 1,806 RTI applications and 281 appeals during the year 2015-2016 which were dealt with as per the provisions of the Act.

### 1.8 Internal Financial Control System

BHEL has adequate system of internal financial controls in place, in the form of well documented policies & procedures that cover critical as well as important activities of financial and other operating functions. The procedures are in the form of manuals, guidelines, delegation of powers and IT system & controls which are effected through people operating in various departments within the company at different levels at each stage of the processes. These are designed to ensure compliance to the Internal Financial Controls as detailed in the Companies Act' 2013. The senior management reviews and certifies the effectiveness of the internal control mechanism over financial reporting, adherence to the code of conduct and company's policies.

BHEL has an in-house Internal Audit Department commensurate with its size of operations. It has Internal Audit Cells located at major manufacturing units, regional offices and at corporate office of the company which carry out audits as per annual audit programme approved and reviewed by Board Level Audit Committee. The Internal Audit Department checks the adequacy and effectiveness of internal financial control system through regular audits, system reviews and provides assurance on compliance to the legal, regulatory and internal policies and procedures of the company.

Functioning of internal audit as well as internal financial control systems are periodically reviewed by the Board Level Audit Committee (BLAC) which is supported by Unit Level Audit Committees (ULAC). Necessary directions are issued by BLAC/ULAC/ Management wherever required to further strengthen the internal financial control system keeping in the view the dynamic environment in which the company is operating. The company continues its efforts to align all its processes and controls with global best practices.

## 1.9 Opportunities and Threats

Domestic economy is experiencing a turnaround. Economy is expected to grow at 7.6% in 2016-17. Important economic reforms, including enhancing financial inclusion, rationalization of subsidies and relaxing FDI limits in several key sectors have buoyed the investment sentiment.

'Make in India' platform presents a plethora of opportunities with major initiatives taken in various sectors like defence, transportation, transmission, renewables etc. Defence sector presents a major opportunity for indigenization and leveraging on domestic strength in manufacturing. In the same line, sectoral push for solar, urban transportation, dedicated freight corridor, e- mobility and green energy corridor will open new avenues for long term sustainable growth. The positive steps taken by the government are likely to translate into more business opportunities for the company. The opportunities have been discussed in detail in the respective chapters on business sectors under **Annexure 1** of MDA.

Climate change is the most potent problem, the world is facing today. Significant cuts in emission of Green House Gases (GHG) from energy need to be achieved through either substituting 'higher emission' generation with 'lower emission' ones or employing energy efficiency measures. It presents a lot of opportunities for companies like BHEL and at

the same time, presents many challenges, particularly related to development of 'green technologies'. With emissions norms getting more stringent, there is an opportunity for supplying emission control equipment for new coal based plants.

Global recovery continues at a slow pace. Delayed recovery in OECD economies and slowdown of China's growth are adding stress to global economic recovery. China's economy is slowing as it transitions from investment and manufacturing to consumption and services. A sharper slowdown in China than currently projected could have strong international spillovers through trade, commodity prices, and confidence, and lead to a more generalized slowdown in the global economy. As per World Economic Outlook released by IMF in April 2016, China is projected to slow to 6.5 per cent this year and 6.2 per cent in 2017. A further weakening is expected in the industrial sector, as excess capacity continues to unwind, especially in real estate as well as in manufacturing.

Geopolitical tensions in Iraq, Libya, Yemen, the Syrian Arab Republic and Ukraine have already had economic impacts at the national and sub-regional levels. Most of the world's major oil-producing countries are still grappling with investment decisions, and subdued output despite modest rebound after the almost collapse in international crude oil prices. The oil price outlook is uncertain and is likely to be so in the near and medium term.

## 1.10 Preparing for growth

Amidst the difficult external economic and business environment, BHEL continues to face challenges in the current year also. Nevertheless, the company has developed considerable resilience to leverage its engineering strength and manufacturing prowess to regain growth momentum in the next phase of Indian economic growth. Overall business scenario is improving and the 'Make in India' initiative of Govt. of India is poised to drive the manufacturing sector into a new phase of growth.

- **Power Sector:** BHEL has taken initiatives to sustain leadership in Indian power sector. Major ones include enlarging scope of offer, expanding business and enhancing competitiveness. Share of EPC orders in the company's power sector order mix is gradually increasing – from 36% in XI FYP to 45% in XII FYP. The company has added Flue-Gas Desulfurization (FGD) system, air cooled condenser and water management system as a strategy to enlarge scope of offer.



Further steps have been taken for indigenization of supercritical technology. Going forward, the company is gearing itself to capitalize opportunities emerging from new environment norms issued by Ministry of Environment, Forest & Climate Change.

- **Make in India:** BHEL considers 'Make in India' as an inflexion point to significantly scale up and diversify its business mix. New opportunities are emerging in defence, railways, solar and also in conventional power sector – most importantly with a focus on enhancing technology depth. The company is building new capabilities and exploring new business models to take advantage of emerging opportunities and is confident of regaining growth momentum in near future. Some of them are:
  - o **Solar PV:** With focus on the growing demand in the solar PV market, BHEL is in the process of augmenting its manufacturing capacity for SPV cell to 105 MW and for modules to 226 MW. Further, EPC capability is being enhanced to 600 MW including long term comprehensive O&M for large projects.
  - o **Transmission:** BHEL has strengthened its higher voltage transmission portfolio with indigenously developed 1200 kV class Transformer & 765 kV Transformers & Reactors. The company is gearing up to address EHV GIS business with own-make GIS upon successful field trials. Initiatives are being taken for exploring tie up with OEMs for SCADA DMS and subsequent implementation of a demonstration project for Smart Grids.
  - o **Transportation:** With the revival of demand from Railways, and emerging opportunities from DFC and urban metro transportation, the company is focusing on business opportunities in Metro coaches, high speed trains and equipment for high HP locomotives. For development of prototype for electric buses, in house development of power electronics, motors and PV based wayside charging equipment has been taken up.
  - o **Defence:** Tie-ups are being pursued with global technology leaders in defence sector by leveraging BHEL's strength in manufacturing.
  - o **Water:** The company is gearing up to

address Sewage Treatment Plant (STP) Business and large scale desalination with O&M.

- **Global Footprints:** The company is making efforts to expand its global footprints and creating more market references. Currently, BHEL is executing 22 projects in 14 Countries.
- **Cost Competitiveness:** To enhance competitiveness of BHEL, various initiatives such as design optimization; enhancing performance parameters; de-packaging of bought-out-items & civil works; and indigenization of supercritical technology have been taken.
- **R&D and Innovation:** BHEL's products and systems are technology intensive and thus, the company has adopted R&D and technology development as one of the central drivers for implementing its strategy. The company has maintained R&D expenditure at plus 2.5% of the turnover for more than 5 years. Recent in-house developments include 765 & 1200 kV UHVAC transformer & reactor, IGBT propulsion technology for loco & ACEMU, STATCOM for industrial & grid applications, Phase Shifting Transformer (PST) and 500 kW PCU for solar PV generation. The company is also working with NTPC and IGCAR for development of Advanced Ultra Supercritical (AUSC) technology for coal based power plants.
- **People Development:** In line with the growing aspirations of the millennial generation of the company, the people development strategy of BHEL is focusing on developing employee competencies in alignment with the business plans through implementation of initiatives like e- learning modules and focus on technical & behavioral trainings.
- **Creating BHEL of tomorrow:** To harness emerging opportunities and regain growth momentum, a strong resolve has been made towards transformation of BHEL into an organization which is "Responsive, Robust and Rising" to the needs of our customers, employees and shareholders. Focus on Execution, Consolidation and Simplification (ECS) is one of the first steps to initiate this transformation process. There is a focus on bringing systemic changes and speed in *Execution* (expeditiously translating an idea or strategy into action); eliminating structural layers of duplication through *Consolidation*; and working on *Simplification* of processes.

## 1.11 Risks and Concerns

BHEL has in place a Board approved Risk Management Charter & Policy which provides overall framework for Enterprise Risk Management in the company. In pursuance with SEBI (Listing Obligations and Disclosure Requirements) Regulation 2015, BHEL has in place a 'Board level Risk Management Committee' (BLRMC) with assigned responsibility of reviewing the company's Risk Governance structure, Risk Assessment & Risk Management framework, Guidelines, Policies and Processes. Besides this, Risk Management Steering Committee (RMSC) is responsible for adopting & implementing the risk management framework and leading the risk management initiative across the company. Chief Risk Officer (CRO) is the convener of BLRMC & RMSC and responsible for periodic reporting on risk management to Board/ BLRMC.

In line with the requirements of the Risk Management Charter & Policy, key risks being faced by the company are analyzed in detail by the risk management committees at top level. Top risk areas are regularly reviewed by the Board/ BLRMC. Risk Management committees at unit level analyze the risks concerned to their respective areas and inform the top management in case their attention is required.

Some of the key risks the company faces, their impact and corresponding strategies undertaken for mitigation by the company are discussed in the below table:

Risk Statement	Mitigation Strategies
Order Book Reduction due to increasing competition, excess domestic manufacturing capacities and low business sentiments.	<ul style="list-style-type: none"> <li>- Expanding the offerings</li> <li>- Diversified Product Profile</li> <li>- Focus on EPC Business</li> </ul>
Online data & information security breach leading to loss and critical information infrastructure breakdown.	<ul style="list-style-type: none"> <li>- Policies in place for technical controls</li> <li>- Implementation of Cyber security incident capturing system across the company</li> <li>- Third party audit as per ISO27001 ISMS Standards</li> <li>- Business Continuity Plan (BCP) &amp; Disaster Recovery (DR) Strategy in place</li> <li>- Setting up of Security Operations center</li> <li>- Crisis Management Groups in place</li> </ul>
Impact of external factors viz. Govt. Policy, infrastructure inadequacy which may adversely impact the business.	<ul style="list-style-type: none"> <li>- Policy advocacy through Administrative Ministry &amp; Industry Associations</li> <li>- Liaison with key business partners</li> </ul>
Rising Debtors and shrinking order book may lead to working capital pressure.	<ul style="list-style-type: none"> <li>- Formation of special groups to accelerate cash collections</li> <li>- Swift closure of punch points with customers</li> <li>- Better scheduling of supplies</li> <li>- Taking up with financial institutions for direct payments</li> <li>- Flagging the issues with government in case of state utilities</li> </ul>

For and on behalf of the Board of Directors of  
**BHARAT HEAVY ELECTRICALS LTD.**



**Atul Sobti**

Chairman & Managing Director

Place : New Delhi  
Dated : August 10, 2016

# Annexure-II

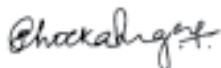
## CEO and CFO Certification

(As per regulation 17(8) of Listing Regulations)

To,

The Board of Directors,  
Bharat Heavy Electricals Ltd.,  
New Delhi.

- (a) We have reviewed financial statements and the cash flow statement of Bharat Heavy Electricals Limited for the year ended 31<sup>st</sup> March, 2016 and that to the best of our knowledge and belief
- (i) These statements do not contain any materially untrue statement or omit any material fact or contain statements that might be misleading;
- (ii) These statements together present a true and fair view of the company's affairs and are in compliance with existing accounting standards, applicable laws and regulations.
- (b) There are, to the best of our knowledge and belief, no transactions entered into by the Company during the year 2015-16 which are fraudulent, illegal or violative of the Company's Code of Conduct.
- (c) We accept responsibility for establishing and maintaining internal controls for financial reporting and that we have evaluated the effectiveness of the internal control systems of the company pertaining to financial reporting and we have disclosed to the auditors and the Audit Committee, deficiencies in the design or operation of such internal controls, if any, of which we are aware and the steps we have taken or propose to take to rectify these deficiencies.
- (d) We have indicated to the auditors and the Audit Committee.
- (i) significant changes in internal control during the year 2015-16;
- (ii) significant changes in accounting policies during the year 2015-16 and that the same have been disclosed in the notes to the financial statements; and
- (iii) instances of significant fraud of which we have become aware and the involvement therein, if any, of the management or an employee having a significant role in the company's internal control system over financial reporting.



**(T. Chockalingam)**  
Director (Finance)



**(Atul Sobti)**  
Chairman & Managing Director

**Place : New Delhi**  
**Dated : May 27, 2016**



# Sustainable Development

## Annexure-III

### Sustainable Development

For BHEL, Sustainability is about creating wealth for its stakeholders through achieving growth which is sustainable, attained in a manner which is socially acceptable while remaining within the realms of the assimilative capacity of our ecological environment.

For almost fifty years of its existence, company has been leveraging technology and innovation for providing products, systems and services to its customers and enabling them to use resources with better efficiency and productivity which is also evident from its Mission statement – ***“Providing sustainable business solutions in the fields of energy, industry & infrastructure.”***

### 3.1 Sustainability Performance- Environmental

#### Sustainability framework

BHEL has formulated a ‘Sustainable Development Policy’ keeping in view of the scale and nature of activities, products & services. This policy is the guiding force for the company which inspires all its endeavours to venture into the realms of sustainable development.

For contributing towards Environment Sustainability, key projects & initiatives undertaken are renewable energy generation through solar power plants, projects for energy conservation and energy efficiency, tree plantation, water conservation, workplace environment improvement by installing fumes extraction systems, installation of turbo-ventilators, noise level reduction systems, resource conservation systems.



Children engaged in activities at Special School, Akanksha, Haridwar, supported by BHEL



Grid connected solar power plant installed at RSK Higher Secondary School in HPBP, Tiruchirapalli campus

## Major activities undertaken during 2015-16

### Responsible Consumption of Natural resources and other Materials

There is continued stress on conservation and effective utilization of various natural resources in manufacturing activities and at project sites. The company has a strong institutionalized mechanism to recycle the products and wastes to the extent feasible. For example, in the CFFP unit, for making castings and forgings molten steel is prepared using only steel scrap. The steel scrap used in the process is partly generated in CFFP itself and the rest is obtained from other manufacturing units and project sites, thus making the molten steel produced an almost 100% recycled product.

Some of the measures adopted in BHEL to minimize waste (scrap) generation at the source itself are:

- Waste reduction in use of steel plates :
  - a. Computerized nesting plan of each steel plate to adjust maximum number of jobs in a plate
  - b. Preservation and reuse of off-cuts generated after nesting & using them for cutting out smaller jobs, like strong backs lifting lugs & tackles, etc.
- Utilization of old packing boxes after repair / modification in HEEP Haridwar in Wood Working Shop, Recovery of 155 drums (27.9 MT) of used /waste oil from Coolant Recovery System & with the help of oil skimmers fitted on main waste water drain.
- Recycling of 384 MT of ferrous and non- ferrous scrap, 30% reduction in paper and printer cartridge consumption in HPEP Hyderabad.
- 686 MT of heavy melting CS Scrap send to CFFP Haridwar for recycling by HPVP Vizag.

- Recovery of waste oil from storm water drain with the help of oil skimmers fitted on a holding tank in TP Jhansi.

### Managing energy requirements at workplace

The Energy Management Policy of BHEL lays emphasis on energy efficiency, use of cleaner technologies, energy conservation and most importantly involvement of employees.

Thrust areas in BHEL pertaining to generation/ use of Renewable Energy are:

- Installation of Roof Top Solar PV Systems
- Installation of Solar Water Heating Systems
- Installation of Grid interactive SPV Power Plant (sub MW and MW scale)
- Installation of Solar Street lights

List of major in-house solar installations as on 31.03.2016 are:

List of major solar installations details within BHEL premises		
SI No	Name of the unit / division	Details of installed system
1	HEP Bhopal	250 kWp SPV Plant
2	R&D Hyderabad	250 kWp SPV Plant
3		13.7 kWp + 13.5 kWp Roof Top Solar Power System
4		1.5 mWp Grid Interactive SPV Plant
5	ESD Bengaluru	42 kWp Roof Top Solar Power Plant
6	HPBP Trichy	20 kWp grid connected Rooftop Solar Power Plant
7		50 kWp + 50 kWp Rooftop Solar Power Plant
8		10 numbers 24 W Solar LED Street Lights
9		80 numbers 40 W Solar LED Street Light
10		3000 Litre Per Day (LPD) Solar Water Heater System
11		4000 Litre Per Day (LPD) Solar Water Heater System
12	BAP Ranipet	17.5 kWp Roof top Solar Power Unit
13		5 mWp Grid Interactive SPV Plant

Total energy generated through various renewable energy systems during 2015-16 stood at 8.08 Million Units as compared to 7.0 Million units during 2014-15.



### Managing Water & Bio-diversity within BHEL's Premises

Strategy of BHEL is in sync with the country's National Water policy 2012 which lays emphasis on water reuse / recycle and gradually moving towards making BHEL units as Zero Liquid Discharge (ZLD) units. Some units of BHEL have already achieved the status of being a ZLD and remaining are striving for achieving this status.

Rain water harvesting, reducing consumption of fresh water in various production activities and increasing the reuse of treated waste water are the key activities towards conservation of water. This year too, these activities were continued. Initiatives like use of treated sewage water for horticulture, recycling of water used as coolant in various processes, recycling of water used in hydraulic testing of equipment and using treated waste water for charging firefighting reservoirs were taken up in some of the manufacturing units.

With respect to its concern for biodiversity, BHEL has been carrying out afforestation activities such as mass tree plantation and development of green belts since its inception. Cumulatively, it has resulted in development of nearly 4.7 million Square meter of green coverage and plantation of more than 3 million trees till date. This year too, planation of saplings of trees and shrubs was carried out across BHEL's establishments.



Hon'ble Union Minister for HI&PE, Sh. Anant Geete, planting a sapling at EDN, Bengaluru

### Emissions and Carbon Management

The emission level of  $\text{NO}_x$ ,  $\text{SO}_x$ , SPM & other significant parameters are well within the limits prescribed by respective State Pollution Control Boards. Monitoring and control of emissions from boiler & gas plant furnaces are undertaken regularly to maintain pollution levels below the permissible limits.

BHEL achieved Carbon footprint avoidance to the extent of 7800 MT  $\text{CO}_2$ -e during 2015-16 which is approx. 24% more as compared to 2014-15 (6300 MT) through various renewable energy based systems.

In addition to generation of renewable energy at BHEL's premises, the usages of cleaner fuels is also one of the factors which is helping the company in mitigating its carbon footprint. BHEL, EPD Bengaluru has stopped using LPG completely and switched over to natural gas (RLNG) which is safer and is having negligible emission to atmosphere. HEEP Haridwar too has switched over to natural gas from producer gas. Also CFFP Haridwar unit has converted oil-fired burners to natural gas fired burners.

### 3.2 Sustainability Performance- Social

BHEL has supported various CSR initiatives in diversified fields across the country. BHEL was awarded "**Pandit Madan Mohan Malviya Bronze Award**" for the CSR initiative - Arivalayam at Trichy, Tamil Nadu. Dr. R.P. Centre for Ophthalmic Sciences, AIIMS, New Delhi honoured BHEL for outstanding contribution to the National Eye Bank. Following are the major CSR activities (focus area-wise) undertaken by BHEL during the year:

#### Healthy India

- In partnership with HelpAge India, PHDRDF and Wockhardt Foundation, BHEL has provided support for running operations of 11 Mobile Medical Units (MMUs) in the vicinity of Project sites and manufacturing units benefitting more than one lakh patients.



In partnership with HelpAge India, BHEL provided Mobile Medical Units in the vicinity of its project sites

- World's first hospital on wheels, 'Lifeline Express train', stationed at Lalitpur (U.P.) was supported by BHEL for providing free medical services such as restoration of sight, hearing, correction of cleft lips, dental and gynaecological treatment etc. to around 7700 patients.





Inauguration of Life Line Express Train deployed by BHEL at Lalitpur Railway Station, Uttar Pradesh for providing free medical aid

- Supported 480 Haemophilic patients including children under CSR initiative - 'Heal a Soul' by providing AHF (Anti Haemophilic Factor).



BHEL felicitated by Haemophilia Federation (India) for its outstanding contribution to the society

- 10,650 people voluntarily pledged to donate their eyes under initiative "Vision to All- BHEL's Call", taking total number of pledges to over 92000.

## Clean India

- More than 60 projects on "Swachh Bharat" viz. construction of toilet facilities at schools in nearby villages, construction of RCC covered drain, purchase of solid waste collection & transportation vehicle, valuing more than ₹ 10.0 Crore were undertaken across BHEL.
- BHEL is providing support for "Installation of 25 Clusters comprising 276 Bio-Digester toilets on the banks of river Ganges near Haridwar & Rishikesh" including safe & clean drinking water facility at each location.



Bio-digester toilets being inaugurated as part of "Swachh Bharat" and "Clean Ganga" initiatives

- BHEL has signed an agreement with Varanasi Nagar Nigam for providing financial support for automated system based solid waste collection and transportation in 14 wards of Varanasi.
- Signed agreement with Noida Authority for CSR project Construction of RCC covered drain along DSC road including a toilet block in Sector-17 Noida.
- Installed 11 Community RO water plants at various locations near BHEL's presence.
- Supported CSR Initiative "Forest based sustainable livelihood project", which aims to manufacture biodegradable leaf cups & plates at Sundergarh District, Odisha.

## Educated India

- "Running of Mobile Science Labs in the vicinity of three units of BHEL viz. Haridwar, Jhansi and Tiruchirappalli" – benefitting about 35,000 students of 250 schools.



Mobile Science Lab deployed by BHEL for children as part of its Educated India campaign

- Providing support for running schools located in townships of our manufacturing units, benefitting the wards of employees as well as others.



*Desks & benches provided by BHEL for one of the Govt. Schools in Goindwal, Punjab*

- Successfully running TV White Space project at Kashi Krishak Inter College, Harhua, Varanasi (in collaboration with ERNET India) to provide low cost internet facility in rural area.
- Initiated Infrastructural development activities in 108 Govt. Schools in Lucknow.
- Provided fabricated bus to run within JNU, New Delhi campus for differently-abled students.

#### Green India

- Installed 50 kWp Grid Interactive Solar Power Plant in Jnanakshi Vidyaniketan, Rajarajeshwari Nagar, Bengaluru.



*50 kWp Grid Interactive Solar Power Plant installed by BHEL in Jnanakshi Vidyaniketan, Bengaluru*

- Initiated a signature project in partnership with IIM Ahmedabad for the Installation of 100 solar water pumps of 5 HP capacity to encourage the use of solar energy by farmers in the villages.

#### Disaster & Calamity

- At the time of Chennai floods, BHEL extended its support for the relief of flood ravaged people

through various Units viz. BAP Ranipet, HPEP Hyderabad, HPVP Vizag, PPPU Thirumayam, PSSR Chennai and HPBP Trichy by deploying Mobile Medical Vans, providing food, groceries & clean drinking water and distributing blankets, toiletries, basic medicines etc.



*Vehicles containing relief materials flagged off by BHEL for undertaking relief operations during Chennai floods*



*Emergency relief materials being distributed by BHEL in the flood-hit areas of Chennai, Tamil Nadu*

### 3.3 Reporting of Corporate Social Responsibility (CSR)

1. Period for which CSR is being reported: 01/04/2015 to 31/03/2016.
2. Information does not include any CSR data / information regarding any BHEL's subsidiary or Joint Venture.
3. No information is included about any other entity pertaining to CSR activities.
4. A brief outline of the company's CSR policy, including overview of projects or programs undertaken and a reference to the web-link to the CSR policy and projects or programs is attached as **Annexure – A**.
5. **The composition of CSR committee at BHEL:** CSR Committee at BHEL is called



Board Level Committee (BLC) for CSR and comprises of Director (HR), Director (Finance), one Part-time Official Director and at least one Independent Director (Part-time Non-official Director). Chairman of the Committee is an Independent Director. Decision with regard to change in composition or re-constitution of CSR Committee is done with approval of the Board. The constitution of the BLC for CSR during Financial Year 2015-16 was as below:

6.

Name (S/Sri)	Designation	Position in CSR Committee
Ms Harinder Hira	Part-time Non-official Director	Chairperson
Rajesh Kumar Singh	Part-time Official Director	Member
D Bandyopadhyay	Director (Human Resources)	Member Since 01/08/2015
T Chockalingam	Director (Finance)	Member Since 11/02/2016
Atul Sobti	Director (Finance)	Member From 01/06/2015 to 11/02/2016
P. K. Bajpai	Director (Finance)	Member Up to 31/05/2015
R. Krishnan	Director (Human Resources)	Member Up to 31/07/2015

7. Average net profit of the company for the last three financial years (2012-13, 2013-14, 2014-15), calculated in accordance with Section 198 of the Companies Act, 2013, is ₹ 5501.63 Crore
8. Prescribed CSR Expenditure (2% of the amount as in point 7 above) comes to ₹ 110.03 Crore, in view of which the Board approved ₹ 110.10 Crore as CSR budget for 2015-16.
9. Details of CSR spent during the financial year (2015-16)

Total amount to be spent for the FY : ₹ 110.10 Crore

Amount unspent (carried forward) : ₹ 43.90 Crore

Manner in which the amount spent in 2015-16 is detailed in **Annexure-B**

10. Reasons for not spending the amount:

- To make a real social impact and to reach underprivileged sections of society, BHEL

generally undertakes longer duration projects including “Mega Projects” planned to be completed in more than one year. Fund required for these projects, beyond FY 2015-16, will be provided from the CSR budget of FY 2015-16.

- Operational issues during implementation like delay in approval from various Govt. Agencies (Central / State / Local) for certain projects led to non-completion of their designated milestones and resulted in delay in spending.
  - Gram Panchayat / State Assembly Elections imposed model code of conduct in some regions and hence some of the projects could not be physically started as per plan.
  - Increased focus on effective monitoring resulted in efficient fund utilization, which led to lesser actual expenditure vis-à-vis amount allocated in some of the projects.
  - As per the Guidelines on CSR & Sustainability, issued by Department of Public Enterprises (DPE), the unspent amount of ₹ 43.90 Crore has not lapsed and has been carried forward to FY 2016-17.
11. We, hereby, declare that the implementation and monitoring of CSR Policy, is in compliance with CSR objectives and Policy of the company.



**(Atul Sobti)**  
Chairman & Managing Director



**(Harinder Hira)**  
Chairperson, CSR Committee

**Place : New Delhi**

**Dated : July 04, 2016**



**Annexure - A****BHEL Corporate Social Responsibility (CSR) Policy Outline**

A brief outline of the company's CSR policy, including overview of projects or programs undertaken and a reference to the web-link to the CSR policy and projects or programs are:

**CSR Vision:**

A responsible corporate citizen working towards a better tomorrow

**CSR Mission:**

To sincerely & effectively discharge company's responsibility in the identified CSR thrust areas and other areas listed out in the Companies Act, 2013

**Objectives of the Policy:**

The objectives of BHEL's CSR Policy are:

- To define CSR projects or programs which BHEL plans to undertake and which fall within the purview of the Companies Act 2013, the Companies (CSR Policy) Rules, 2014 and the prevailing DPE Guidelines;
- Modalities of execution of such CSR projects or programs;
- Monitoring process of such CSR projects or programs;
- To make the stakeholders aware about CSR practices in BHEL;
- To work keeping in mind the larger objective of sustainable development in conduct of business and in pursuit of CSR agenda.

**Salient Points of the Policy:**

The salient features of BHEL's CSR Policy are:

- It covers the requirements stated in the Companies Act, the Companies (CSR Policy) Rules, 2014 and DPE Guidelines on CSR & Sustainability;
- Thrust areas for CSR activities have been identified and included in Chapter-2 (CSR Policy Statement), based on the activities mentioned in Schedule VII of the Companies Act, 2013. The same are : 1) Inclusive India 2) Healthy India 3) Clean India 4) Educated India 5) Responsible India 6) Green India 7) Heritage India;
- Policy specifies 2% of average net profit of last three years as CSR budget for the year and

allocation of fund among various expenditure heads (Chapter-3);

- The company shall give preference to the local areas (district in which BHEL unit is present and the adjoining districts) for spending at least 75% of the amount earmarked for CSR activities;
- Generally, CSR initiatives shall be taken up in project mode;
- A project whose total value (whether or not extending over one or more FYs) is more than ₹ 2 Crore will be termed as 'Mega Project'. Impact assessment of such projects will be mandatory by an external agency;
- Provision to reserve 5% of the annual CSR budget as Emergency Fund has been made for carrying out relief activities for any disaster/ calamity;
- In line with the Companies (CSR Policy) Rules, 2014, and DPE Guidelines, 2014, up to 5% of CSR Budget of the year shall be kept as a reserve for capacity building including administrative overheads. This fund shall be utilized for capacity building of the company personnel as well as those of its implementing agencies (through institutions with established track record of at least three financial years), baseline survey & impact assessment and CSR staffs' salary;
- Implementation, monitoring & reporting mechanism has been defined;
- 3-tier CSR structure at Corporate Level (consisting of Board Level Committee (BLC), Level – 1 Committee and Level – 2 Committee, along with their members and roles) and CSR Nodal officer (the concerned Unit Head) & CSR Committees at Units/ Regions/ Divisions level (along with their roles) have been defined.

**Web-Link to CSR Policy:** BHEL CSR Policy is hosted on the Company's website at [www.bhel.com](http://www.bhel.com) at [http://www.bhel.com/CSR/csr\\_policy.php](http://www.bhel.com/CSR/csr_policy.php) under CSR section.

## Annexure-B

### Manner in which CSR Fund spent in FY 2015-16

(₹ in Lakhs)

S. No.	Project Name	Sector in which the project is covered (Item No. of Schedule VII)	Thrust Area	Area - Local or other	State	District / Region	Amount outlay (budget) project wise	Amount spent on the project or programs	Cumulative-expenditure upto the reporting period	Amount spent directly or through implementing agency	Name of Implementing Agency
1	Equipment for sweeping, collection and transportation of solid waste in 14 wards of Varanasi Nagar Nigam	1	Clean	Local	Uttar Pradesh	Varanasi	529.00	183.27	183.27	Implementing Agency	Varanasi Nagar Nigam
2	Construction of RCC Covered drain along Dadri-Surajpur-Chalera (DSC) road and Public Toilet Block at the Rajnigandha Chowk in Noida	1	Clean	Local	Uttar Pradesh	Gautam Budhh Nagar	315.00	75.00	75.00	Implementing Agency	Noida Authority
3	Construction/ Renovation of Toilets in Govt. Schools at Lucknow	1	Clean	Local	Uttar Pradesh	Lucknow	70.00	30.00	30.00	Direct	BHEL - IP, Jagdishpur
4	School Expenditure	1	Clean	Local	Tamil Nadu	Tiruchirappalli	15.24	15.24	15.24	Direct	BHEL - HPBP, Trichy
5	Infrastructure improvement in Schools in Rural Area - RO plants at Guntur Schools	1	Clean	Other	Andhra Pradesh	Guntur	26.00	14.00	14.00	Direct	BHEL - HPEP, Hyderabad
6	Forest Based Sustainable Livelihood Projects - Making Leaf Plates for the benefit of environment	1	Clean	Other	Odisha	Sundergarh	13.35	13.00	13.00	Implementing Agency	Society for education and environmental training
7	Construction of Boys & Girls Toilet in Govt. Middle school, Jalahalli, Bengaluru	1	Clean	Local	Karnataka	Bengaluru	12.48	12.47	12.47	Direct	BHEL - EPD, Bengaluru
8	Construction of 3 Urinal-cum-toilet blocks with Septic Tanks for girls in 3 Govt. and Govt. aided schools at Neyveli.	1	Clean	Other	Tamil Nadu	Cuddalore	10.04	10.04	10.04	Direct	BHEL - PSSR, Chennai
9	Child Friendly School Toilet Cluster - 05 numbers at school at Haruha, Chiragaon and Varanasi Urban	1	Clean	Local	Uttar Pradesh	Varanasi	10.00	10.00	10.00	Implementing Agency	Sulabh Sanitation Mission Foundation, Delhi
10	Installation of dustbin in public locations at Vizag, A.P.	1	Clean	Local	Andhra Pradesh	Vizag	10.00	10.00	10.00	Implementing Agency	Greater Vishakhapatnam Municipal Corporation
11	Support to construct 1000 individual house-hold toilets to BPL families in Thuvakudi	1	Clean	Local	Tamil Nadu	Tiruchirappalli	10.00	10.00	10.00	Implementing Agency	Local Govt.
12	Other projects related expenditure on Sanitation & Safe Drinking Water with spending less than ₹ 10 L in 2015-16 at Andhra Pradesh, Bihar, Delhi/ NCR, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Punjab, Rajasthan, Tamil Nadu, Telangana, Uttar Pradesh, Uttarakhand, West Bengal	1	Clean	NA	Pan India	Various Locations	494.87	277.63	284.09	Direct	Various Units of BHEL
13	Deployment of Life Line Express at Lalitpur, U.P.	1	Healthy	Local	Uttar Pradesh	Lalitpur	70.00	63.13	63.13	Implementing Agency	Impact India Foundation

(₹ in Lakhs)

S. No.	Project Name	Sector in which the project is covered (Item No. of Schedule VII)	Thrust Area	Area - Local or other	State	District / Region	Amount outlay (budget) project wise	Amount spent on the project or programs	Cumulative-expenditure upto the reporting period	Amount spent directly or through implementing agency	Name of Implementing Agency
14	Other projects related to Healthcare with spending less than ₹ 10 L in 2015-16 at Andhra Pradesh, Delhi/NCR, Himachal Pradesh, Jammu & Kashmir, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Punjab, Tamil Nadu, Telangana, Uttar Pradesh, Uttarakhand, West Bengal	1	Healthy	NA	Pan India	Various Locations	541.76	108.88	108.88	Direct	Various Units of BHEL
15	Projects related to Relief measures for Disaster affected area with spending less than ₹ 10 L in 2015-16 at Andhra Pradesh, Tamil Nadu	1	Responsible	NA	Pan India	Various Locations	66.10	44.91	52.37	Direct	Various Units of BHEL
16	School Expenditure	2	Educated	Local	Uttarakhand	Haridwar	2250.00	2241.83	2241.83	Direct	BHEL - HEEP, Haridwar
17	School Expenditure	2	Educated	Local	Madhya Pradesh	Bhopal	880.00	516.62	516.62	Direct	BHEL - HEP, Bhopal
18	School Expenditure	2	Educated	Local	Uttar Pradesh	Jhansi	295.00	291.18	291.18	Direct	BHEL - TP, Jhansi
19	School Expenditure	2	Educated	Local	Andhra Pradesh	Vizag	165.00	160.50	160.50	Direct	BHEL - HPVP, Vizag
20	School Expenditure	2	Educated	Local	Uttar Pradesh	Amethi	140.00	131.34	131.34	Direct	BHEL - IP, Jagdishpur
21	School Expenditure	2	Educated	Local	Tamil Nadu	Tiruchirappalli	134.76	126.76	126.76	Direct	BHEL - HPBP, Trichy
22	School Expenditure	2	Educated	Local	Tamil Nadu	Vellore	84.00	72.28	72.28	Direct	BHEL - BAP, Ranipet
23	Infrastructure improvement in Schools in Rural Area - Classrooms and Toilets	2	Educated	Local	Telangana	Medak	59.58	58.80	58.80	Direct	BHEL - HPEP, Hyderabad
24	Setting up of Multi media Project lab in 44 Govt. schools each at Delhi and Bhopal through RK Mission	2	Educated	Local	Delhi/ NCR and MP	Delhi and Bhopal	40.00	40.00	40.00	Implementing Agency	RK Mission
25	Infrastructure improvement in Schools in Rural Area - Classrooms	2	Educated	Other	West Bengal and Rajasthan	Murshidabad and Sri Ganganagar	48.57	33.48	40.65	Direct	BHEL - PSER, Kolkata
26	School Expenditure	2	Educated	Local	Telangana	Medak	30.00	29.40	29.40	Direct	BHEL - HPEP, Hyderabad
27	Infrastructure improvement in Schools in Rural Area - Classrooms	2	Educated	Local	Madhya Pradesh	Bhopal	67.20	27.87	34.19	Direct	BHEL - HEP, Bhopal
28	Infrastructure improvement in Schools in Rural Area - Classrooms and Toilets	2	Educated	Local	Uttarakhand	Haridwar	87.56	25.49	69.84	Direct	BHEL - HEEP, Haridwar
29	Scholarship to disabled students of ITI @ Rs 20,000/- each	2	Educated	Local	Madhya Pradesh	Bhopal	16.40	14.08	14.08	Direct	BHEL - HEP, Bhopal
30	Construction of Primary School Building at Honnalaganhalli Doddi, Kanakpur	2	Educated	Local	Karnataka	Ramanagar	14.00	12.05	12.05	Direct	BHEL - EPD, Bengaluru



(₹ in Lakhs)

S. No.	Project Name	Sector in which the project is covered (Item No. of Schedule VII)	Thrust Area	Area - Local or other	State	District / Region	Amount outlay (budget) project wise	Amount spent on the project or programs	Cumulative-expenditure upto the reporting period	Amount spent directly or through implementing agency	Name of Implementing Agency
31	Procurement and Supply of Furniture and other required educational / play equipment 1. MPUP School, Madinaguda, Serilingampally. 2. Govt. Degree College for Women, Sangareddy 3. ZPH School, T/s, RC Puram 4. MPP School, T/s RC Puram 5. ZPH School, Patencheru 6. ZPH School (GIRLS), Patencheru	2	Educated	Local	Telangana	Medak	30.00	11.81	11.81	Direct	BHEL - HPEP, Hyderabad
32	To provide Furniture to various Schools - 1) 100 sets benches & desks - 6 lakh 2) Steel Bureau - 25 nos -2 lakh 3) Tables & chairs for teachers - 50 sets -1.75 lakhs	2	Educated	Local	Tamil Nadu	Tiruchirappalli Thanjavure	10.20	10.18	10.18	Direct	BHEL - HPBP, Trichy
33	Construction of Overhead Service Reservoir (5 Lakh Litre Capacity) for the Nakadar institute at Mahesana	2	Educated	Other	Gujarat	Mahesana	52.00	10.00	10.00	Implementing Agency	Dr. Nakadar Charitable Trust
34	Other Projects related to Education with spending less than ₹ 10 L in 2015-16 at Andhra Pradesh, Delhi/NCR, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Punjab, Tamil Nadu, Telangana, Uttar Pradesh, Uttarakhand	2	Educated	NA	Pan India	Various Locations	1087.30	222.47	519.19	Direct	Various Units of BHEL
35	Skill Development Expenses	2	Inclusive	Local	Tamil Nadu	Tiruchirappalli	159.16	159.16	159.16	Direct	BHEL - HPBP, Trichy
36	Skill Development Expenses	2	Inclusive	Local	Telangana	Medak	18.96	18.96	18.96	Direct	BHEL - HPEP, Hyderabad
37	Skill Development Expenses	2	Inclusive	Local	Uttarakhand	Haridwar	18.38	18.38	18.38	Direct	BHEL - HEEP, Haridwar
38	Skill Development Expenses	2	Inclusive	Local	Madhya Pradesh	Bhopal	17.71	17.71	17.71	Direct	BHEL - HEP, Bhopal
39	Skill Development Expenses	2	Inclusive	Local	Delhi/NCR	Delhi	17.02	17.02	17.02	Direct	BHEL - Corporate Office, Delhi
40	Skill Development Expenses	2	Inclusive	Local	Karnataka	Bengaluru	11.52	11.52	11.52	Direct	BHEL - EDN, Bengaluru
41	Other Projects related to Skill Development & Training with spending less than ₹ 10 L in 2015-16 at Andhra Pradesh, Delhi/NCR, Karnataka, Madhya Pradesh, Tamil Nadu, Telangana, Uttar Pradesh, Uttarakhand, West Bengal	2	Inclusive	NA	Pan India	Various Locations	158.76	118.89	118.89	Direct	Various Units of BHEL
42	Support for construction of Multipurpose Hall in Nursing College, Bhopal	3	Responsible	Local	Madhya Pradesh	Bhopal	102.70	29.15	29.15	Direct	BHEL - HEP, Bhopal
43	Distribution of aids and appliances to Persons with Disabilities (PwDs)	3	Responsible	Other	Assam	Hailakandi and Morigaon	56.50	28.25	28.25	Implementing Agency	ALIMCO
44	Providing for the Security of Working Women Hostel	3	Responsible	Local	Uttarakhand	Haridwar	16.00	11.64	11.64	Direct	BHEL - HEEP, Haridwar

(₹ in Lakhs)

S. No.	Project Name	Sector in which the project is covered (Item No. of Schedule VII)	Thrust Area	Area - Local or other	State	District / Region	Amount outlay (budget) project wise	Amount spent on the project or programs	Cumulative-expenditure upto the reporting period	Amount spent directly or through implementing agency	Name of Implementing Agency
45	Other Projects related to Community Development & Social Upliftment with spending less than ₹ 10 L in 2015-16 at Andhra Pradesh, Delhi/NCR, Gujarat, Karnataka, Madhya Pradesh, Rajasthan, Tamil Nadu, Telangana, Uttar Pradesh, Uttarakhand	3	Responsible	NA	Pan India	Various Locations	224.95	102.68	157.27	Direct	Various Units of BHEL
46	Installation of domestic & street light solar system in two villages of Medak district of Telangana	4	Green	Local	Telangana	Medak	298.00	230.39	230.39	Implementing Agency	TNREDCL
47	Installation of Solar Utilities in the Rural Area	4	Green	Local	Telangana	Medak	74.00	74.00	74.00	Direct	BHEL - HPEP, Hyderabad
48	Installation of Solar Utilities in the Rural Area	4	Green	Local	Tamil Nadu	Tiruchirappalli	71.75	36.53	71.75	Direct	BHEL - HPBP, Trichy
49	Setting up of 50kWp Grid interactive Solar Power Plant in Sri Jnanakshi Vidyaniketan, Rajarajeshwarinagar	4	Green	Local	Karnataka	Bengaluru	23.75	23.74	23.74	Implementing Agency	Sri Jnanakshi Vidyaniketan
50	Installation of Solar Utilities in the Rural Area	4	Green	Local	Madhya Pradesh	Bhopal	60.00	21.59	21.59	Direct	BHEL - HEP, Bhopal
51	Installation of 75 Solar Street Light Deoli Village, Bilaspur (H.P.)	4	Green	Other	Himachal Pradesh	Bilaspur	14.17	14.19	14.19	Implementing Agency	HIMURJA, H.P.
52	Installation of 100 solar street lights in villages at Pilibhit District, U.P.	4	Green	Other	Uttarakhand	Pilibhit	19.30	10.00	10.00	Implementing Agency	Bal Bharti Academy
53	Other Projects related to Environment & Ecology Protection with spending less than ₹ 10 L in 2015-16 at Delhi/NCR, Karnataka, Madhya Pradesh, Punjab, Rajasthan, Tamil Nadu, Uttarakhand, West Bengal	4	Green	NA	Pan India	Various Locations	232.24	49.41	61.96	Direct	Various Units of BHEL
54	Providing seating arrangements for the auditorium of Dr. Baba Saheb Ambedkar trust	5	Heritage	Local	Karnataka	Bengaluru	10.00	10.00	10.00	Implementing Agency	Dr. Baba Saheb Ambedkar trust
55	Other Projects related to Promotion of Arts & Culture with spending less than ₹ 10 L in 2015-16 at Karnataka, Tamil Nadu	5	Heritage	NA	Pan India	Various Locations	33.00	22.60	22.60	Direct	Various Units of BHEL
56	Projects related to Promotion of Sports having spending less than ₹ 10 L in 2015-16 at Delhi/NCR, Tamil Nadu, Uttar Pradesh, West Bengal	7	Healthy	NA	Pan India	Various Locations	15.30	12.76	12.76	Direct	Various Units of BHEL
57	installation of 100 nos. Solar Pumps for Irrigation to benefit farmers	9	Green	Other	Gujarat	Ahmedabad	44.73	23.70	23.70	Implementing Agency	IIM-Ahmedabad
58	Installation of 100 Solar Water Pumps for the benefit of the farmers	9	Green	Local	Karnataka, Uttarakhand, Madhya Pradesh	Davangere, Aurangabad and Kahna Saiyya	443.40	0.00	0.00	Implementing Agency	IIM-Ahmedabad
59	Construction of Cement Concrete Roads in Musturu at Davangere	10	Responsible	Other	Karnataka	Davangere	287.00	151.71	151.71	Implementing Agency	Engineering Projects India Ltd.
60	Construction/ Renovation of Community Centre in Rural Area	10	Responsible	Local	Tamil Nadu	Tiruchirappalli	55.71	40.95	55.71	Direct	BHEL - HPBP, Trichy

(₹ in Lakhs)

S. No.	Project Name	Sector in which the project is covered (Item No. of Schedule VII)	Thrust Area	Area - Local or other	State	District / Region	Amount outlay (budget) project wise	Amount spent on the project or programs	Cumulative-expenditure upto the reporting period	Amount spent directly or through implementing agency	Name of Implementing Agency
61	Construction/ Renovation of Community Centre in Rural Area	10	Responsible	Local	Uttarakhand	Haridwar	22.00	18.41	18.41	Direct	BHEL - HECP, Haridwar
62	Other Projects related to Rural Area Development having spending less than ₹ 10 L in 2015-16 at Madhya Pradesh, Maharashtra, Rajasthan, Telangana, West Bengal	10	Responsible	NA	Pan India	Various Locations	150.95	14.64	14.64	Direct	Various Units of BHEL
63	Capacity Building Expense including expenses on Admin. Overheads	Capacity	Capacity	NA	Pan India	Various Locations	422.39	418.79	422.39	Direct	Various Units of BHEL
						<b>TOTAL</b>	<b>10764.76</b>	<b>6620.47</b>	<b>7109.66</b>		



# Annexure-IV

## Business Responsibility Report 2015-16

### Section A: General Information about the Company

1. **Corporate Identity Number (CIN) of the Company:** L74899DL1964GOI004281
2. **Name of the Company:** BHARAT HEAVY ELECTRICALS LIMITED
3. **Registered address:** BHEL House, Siri Fort, New Delhi – 110 049
4. **Website:** www.bhel.com
5. **E-mail id:** shareholderquery@bhel.in
6. **Financial Year reported:** 2015-16
7. **Sectors that the Company is engaged in:** Refer to 'Corporate Profile', Annual Report 2015-16
8. **List three key products/services that the Company manufactures/provides:**
  - a) Steam Turbine, Generators, Boilers & accessories for Thermal power plant (NIC Code: Group 281)
  - b) Locomotives, propulsion equipment, traction motors/alternators (NIC Code: Group 302)
  - c) Power & instrument transformers, reactors, switchgear, capacitors, insulators, FACTS & HVDC system for Transmission segment (NIC Code: Group 271)
9. **Total number of locations where business activity is undertaken by the Company:**
  - a) **Number of International Locations (Provide details of major 5)**  
Major locations from where business activity is undertaken by BHEL are Jakarta (Indonesia), Almaty (Republic of Kazakhstan), Thimpu (Bhutan), Dubai (UAE) and Shanghai (China).
  - b) **Number of National Locations**  
The company has 17 manufacturing units, 2 repair units, 4 regional offices, 8 service centres, and 15 regional centres.
10. **Markets served by the Company:** BHEL serves national as well as international markets.

### Section B: Financial Details of the Company (2015-16)

1. Paid up capital : ₹ 489.52 Crore
2. Total Turnover : ₹ 26587 Crore
3. Total Profit/(Loss) after Tax : ₹ (913) Crore
4. Total expenses incurred on CSR & SD : ₹ 110.10 Crore  
(Including carried forward amount of ₹ 43.90 Crore)
5. List of activities in which expenditure on CSR has been incurred: Refer to **Annexure-III** on 'Sustainable Development'.

### Section C: Other Details

1. **Does the Company have any Subsidiary Company/ Companies?**  
Yes, BHEL has one subsidiary company- BHEL Electrical Machines Ltd. (BHEL-EML), Kasargod as on 31-03-2016
2. **Do the Subsidiary Company/Companies participate in the BR Initiatives of the parent company? If yes, then indicate the number of such subsidiary company(s)**  
BHEL-EML, Kasaragod does not participate in the BR initiatives of BHEL. However, BHEL-EML is a Schedule 'C' Central Public Sector Enterprise which adheres to the guidelines as issued by Govt. of India from time to time.
3. **Do any other entity/entities (e.g. suppliers, distributors etc.) that the Company does business with, participate in the BR initiatives of the Company? If yes, then indicate the percentage of such entity/entities? [Less than 30%, 30-60%, More than 60%]**  
In most of the cases, BR initiatives are carried out by BHEL only.

### Section D: BR Information

1. **Details of Director/Directors responsible for BR**
  - a) Details of the Director / BR Head responsible for implementation of the BR policy/policies

S.N.	Particulars	Details
i.	DIN Number (if applicable)	07221633
ii.	Name	D. Bandyopadhyay
iii.	Designation	Director (HR)
iv.	Telephone number	011 26001003
v.	e-mail id	db@bhel.in

## 2. Principle-wise (as per NVGs) BR Policy/ policies (Reply in Y/N)

The National Voluntary Guidelines on Social, Environmental and Economic Responsibilities of Business (NVGs) released by the Ministry of Corporate Affairs has adopted nine areas of Business Responsibility. These briefly are as under:

P1: Businesses should conduct and govern themselves with Ethics, Transparency and accountability.

P2: Businesses should provide goods and services that are safe and contribute to sustainability throughout life cycle.

P3: Businesses should promote the well beings of all employees.

P4: Businesses should respect the interests of, and be responsive towards all stakeholders, especially those who are disadvantaged, vulnerable and marginalized.

P5: Businesses should respect and promote human rights.

P6: Businesses should respect, protect and make efforts to restore the environment.

P7: Businesses, when engaged in influencing public and regulatory policy, should do so in responsible manner.

P8: Businesses should support inclusive growth and equitable development.

P9: Businesses should engage with and provide value to their customers and consumers in a responsive manner.

S.No.	Questions	P1	P2	P3	P4	P5	P6	P7	P8	P9
1	Do you have policy/policies for	Y	Y	Y	Y	Y	Y	N	Y	Y
2	Has the policy been formulated in consultation with the relevant stakeholders?	Y	Y	Y	Y	Y	Y	N	Y	Y
3	Does the policy conform to any national /international standards? If yes, specify? (50 words)	Y	Y	Y	Y	Y	Y	N	Y	Y
4	Has the policy being approved by the Board? If yes, has it been signed by MD/owner/CEO/ appropriate Board Director?	Y	Y	Y	Y	Y	Y	N	Y	Y
5	Does the company have a specified committee of the Board/ Director/Official to oversee the implementation of the policy?	Y	Y	Y	Y	Y	Y	N	Y	Y
6	Indicate the link for the policy to be viewed online?	Links have been provided wherever applicable								
7	Has the policy been formally communicated to all relevant internal and external stakeholders?	Y	Y	Y	Y	Y	Y	N	Y	Y
8	Does the company have in-house structure to implement the policy/policies?	Y	Y	Y	Y	Y	Y	N	Y	Y
9	Does the company have a grievance redressal mechanism related to the policy/policies to address stakeholders' grievances related to the policy/policies?	Y	Y	Y	Y	Y	Y	N	Y	Y
10	Has the company carried out independent audit/ evaluation of the working of this policy by an internal or external agency	Y	Y	Y	Y	Y	Y	N	Y	Y

**Notes:**

1. We have various practices established based on these principles, but do not have formal policy document with respect to some of them. We plan to bring out such policies in due course of time.
2. Once a policy is approved by the Board, it need not be necessarily signed by CMD/Board Director.
3. Policies and procedures of the organization are subject to audits/reviews during/by ISO 9001, ISO 14001, OHSAS 18001, CAG, Parliamentary Committees, Board of Directors, Committee of Functional Directors, Board Level Committees and/or Management Committee etc.

**2a. If answer to S.No. 1 against any principle, is 'No', please explain why: (Tick up to 2 options)**

In respect of Principle 7 referring to Policy Advocacy, BHEL has various practices established based on this principle, but do not have formal policy document with respect to some of them. We plan to bring out such policies in due course of time.

**3. Governance related to BR**

- **Indicate the frequency with which the Board of Directors, Committee of the Board or CEO assess the BR performance of the company. (Within 3 months, 3-6 months, Annually, More than 1 year)**

To assess & review the performance of CSR activities in BHEL, the Board Level Committee for CSR met 5 times during 2015-16. While BHEL Board met 4 times in 2015-16 for assessment & review of CSR activities in BHEL.

- **Does the company publish a BR or a Sustainability Report? What is the hyperlink for viewing this report? How frequently it is published?**

BHEL publishes its Sustainability Report annually. Last 3 years' reports can be accessed on Corporate Webpage through the following link: [http://www.bhel.com/healthsafety/global\\_compact.php](http://www.bhel.com/healthsafety/global_compact.php)

## Section E: Principle-wise performance

### Principle 1: Ethics, Transparency and Accountability

BHEL has a Board approved 'Code for Business Conduct & Ethics' for all Board Members and Senior Management personnel which can be viewed through the following link: [http://www.bhel.com/investor\\_](http://www.bhel.com/investor_relations/pdf/Code_of_Business_Conduct_and_Ethics.pdf)

[relations/pdf/Code\\_of\\_Business\\_Conduct\\_and\\_Ethics.pdf](http://www.bhel.com/investor_relations/pdf/Code_of_Business_Conduct_and_Ethics.pdf)

In addition, as part of BHEL's persisting endeavor to set a high standard of conduct for its employees (other than those governed by standing orders), the 'BHEL Conduct, Discipline and Appeal Rules, 1975' is in place. This is augmented by Fraud Prevention Policy and Whistle Blower Policy which not only arm one against unacceptable practices but also act as deterrents.

The company is subject to RTI Act 2005 and audit by Statutory Auditors and CAG audit under section 139 of the Companies Act, 2013.

An MoU has been signed with Transparency International India (TII) to adopt 'Integrity Pact', to make public procurement and contracting more transparent by binding both the parties to ethical conduct. A panel of three Independent External Monitors (IEMs) have been appointed with due approval of Central Vigilance Commission to oversee implementation of Integrity Pact in BHEL. Under 'Delegation of Power' of various functionaries, accountability is well defined. Works Policy, Purchase Policy and other policy documents facilitate transparency in BHEL working and commitment of highest order of integrity. Two representations from suppliers have been received during the year under Integrity Pact which have since been resolved by the IEMs.

BHEL has a Stakeholders Relationship Committee specifically to look into matters related to redressal of shareholders and investors complaints. As reported by M/s Karvy Computershare Private Limited (RTA), 468 complaints were received from the shareholders during the year under review and all complaints were redressed up to 31st March, 2016.

In addition, a total of 310 public grievance complaints were received from the general public under the Centralized Public Grievance Redressal and Monitoring Scheme during the 2015-16. All the grievances were disposed of within the prescribed time of 60 days.

### Principle 2: Products Life Cycle Sustainability

BHEL is contributing to a greener environment through development of environment friendly technologies and improvement in efficiency of equipment. Continuous improvement in cycle efficiency and reduced emissions have been achieved over time by evolution of technology from sub-critical to supercritical. Performance of BHEL supplied power plant equipment are driven by lower auxiliary power consumption, higher plant efficiency, lower design heat rate & better PLF, all resulting in lower life cycle cost.



Four prime products which have incorporated environmental concerns in their design are power plants operating with steam at supercritical parameters, Flue-gas desulfurization (FGD), Solar Photovoltaic and Electrostatic Precipitator (ESP).

BHEL has implemented e-procurement as business improvement and sustainable business practice. In this direction adding another milestone towards green initiative by leveraging technology, BHEL has implemented its in-house developed "Online Supplier Registration Portal" hosted at [www.bhel.com](http://www.bhel.com) and applicable for all its manufacturing units. The portal enables prospective suppliers to submit their registration forms and online processing thereof.

BHEL has been supporting Micro and Small Enterprises (MSEs) and local suppliers in and around its manufacturing units. Regular Vendor Meets and Supplier development programs are being organized by BHEL units, specifically for MSEs (including local suppliers) as well as specific to SC/STs, which serve as platform for identification of needs and formulation of action plan for mutual benefits. Also, as mandated in the Public Procurement Policy-2012 for MSEs (issued by Ministry of MSME- Govt. of India), BHEL has achieved the target of 20% of its total procurement from MSEs during 2015-16.

Reusable materials are being used for packing and other activities. The company has a strong institutionalized mechanism to recycle scrap. One of BHEL units, Central Foundry Forge Plant (CFFP) manufactures steel forgings and castings for which the molten steel required is produced in the steel melting shop using steel scrap as a major raw material. BHEL recycled/reused nearly 3-5% of its materials as recycled input materials, thereby reducing impact on natural resources.

### Principle 3: Employee's Well-being

BHEL has been a frontrunner in the area of human resource management and have documented the HRM policies and rules in the form of a codified Personnel Manual to ensure transparency and uniformity of implementation.

1. The total number of regular employees as on 31-03-2016: 42,198
2. Total number of employees hired on temporary/contractual basis: BHEL does not hire employees on temporary/casual basis. However, BHEL awards job/works contracts to contractors at its various Units/Divisions/Departments as per organizational needs. The no. of workers with contractors varies from time to time.

3. Number of permanent women employees as on 31-03-2016: 2367
4. Number of permanent employees with disabilities as on 31-03-2016: 929
5. BHEL has 30 participating unions in respect of workmen. There are two employee associations, one for Executives and one for Supervisors in BHEL.
6. The percentage of permanent employees who are members of recognized employee association is not available.
7. In 2015-16, BHEL received a total of 4 complaints on sexual harassment and all have been resolved satisfactorily. Further, no complaint of child labour/forced labour/involuntary labour/discriminatory employment has been received.
8. During the year 2015-16, total number of training man-days per employee is 4.18. In non-BHEL personnel training category, 7157 apprentices (trade, diploma, graduate apprentices) and 11026 vocational trainees were trained in different BHEL manufacturing units. Training on Health Safety & Environment (HSE) aspect is an essential element of BHEL's induction training programme. In addition, separate programmes are regularly conducted at all BHEL's manufacturing units and project sites to train employees on HSE through internal and external faculty members.

### Principle 4: Stakeholder Engagement

Yes, BHEL has identified Customers, Employees, Shareholders, Vendors and Society as its stakeholders. BHEL has processes in place to ensure inclusion of stakeholder concerns and expectations. Key issues are identified through ongoing stakeholder engagement and addressed by programmes or action plans with clear and measurable targets. BHEL units regularly organize Vendor Meets specifically for MSEs (including local suppliers) towards capacity and capability building, which also provide opportunities for open communication for mutual benefits and support.

BHEL has clearly identified the disadvantaged, vulnerable poor, needy & marginalized stakeholder in the vicinity of the BHEL manufacturing units/regions/divisions/sites/offices and their concerns are addressed as per BHEL's CSR Policy which is in compliance with section 135 & Schedule VII of the Companies Act 2013 and Rules made thereunder as well as DPE Guidelines on CSR & Sustainability for CPSEs released on 21.10.2014.

### Principle 5 - Human Rights

BHEL policies are in line with the principles of Human Rights, The Constitution of India, and various applicable Laws. BHEL has special provisions for ensuring safeguard of women employee at the workplace. No instance of human rights abuse has been reported in the company.

BHEL is a life time member of United Nations Global Compact (UNGC), India Network. The company reports its performance on 10 Principles of UNGC every year since 2001 through Communication on Progress (CoP). This CoP is web-hosted on UNGC website and can be accessed through the webpage: <https://www.unglobalcompact.org/participation/report/cop/create-and-submit/active/250791>

The same is also available and accessed from: [http://www.bhel.com/healthsafety/global\\_compact.php](http://www.bhel.com/healthsafety/global_compact.php)

### Principle 6: Environment

All major manufacturing units and Power Sector regions of BHEL have well established Environment Management Systems (EMS) accredited to international standard ISO 14001:2004. The organization has a corporate HSE Policy based on which all our manufacturing units and regions have derived their own HSE Policy.

Details about activities of BHEL in respect of Environmental management are listed in **Annexure III** to the Directors' report under Sustainable development.

No show cause/legal notice received from Central Pollution Control Board (CPCB)/State Pollution Control Board (SPCB) is pending as on 31.03.16.

### Principle 7: Policy Advocacy

BHEL is a member of many trade and chamber/associations. Some of them are: Confederation of Indian Industry (CII), Federation of Indian Chambers of Commerce and Industry (FICCI), Associated Chambers of Commerce and Industry of India (ASSOCHAM), Indian Electrical and Electronics Manufacturers Association (IEEMA).

BHEL participates in policy advocacy through these bodies for promoting company's interests via knowledge sharing. BHEL actively contributed through public advocacy towards policies meant for strengthening of technology base in country, skill development, development of Indian Power Sector and Indian Manufacturing Industry, and growth of Public Sector Enterprises through better governance.

### Principle 8: Inclusive Growth

BHEL has well-structured organizational set-up, policy & processes through which various CSR programmes towards inclusive growth and equitable development are being taken up. The company supports numerous social initiatives across the country by undertaking projects through specialized agency such as NGOs, Govt. agencies etc. in line with the Schedule VII of section 135 of the Companies Act 2013. Details about activities of BHEL in respect of inclusive growth are listed in **Annexure III** to the Directors' report under Sustainable development.

### Principle 9: Customer Value

For BHEL, customer focus is essential part of business and the company is persistently working towards creating value for customer through products and services. It is an integral part of BHEL's culture which is also reflected in our Vision, Mission and Values statement.

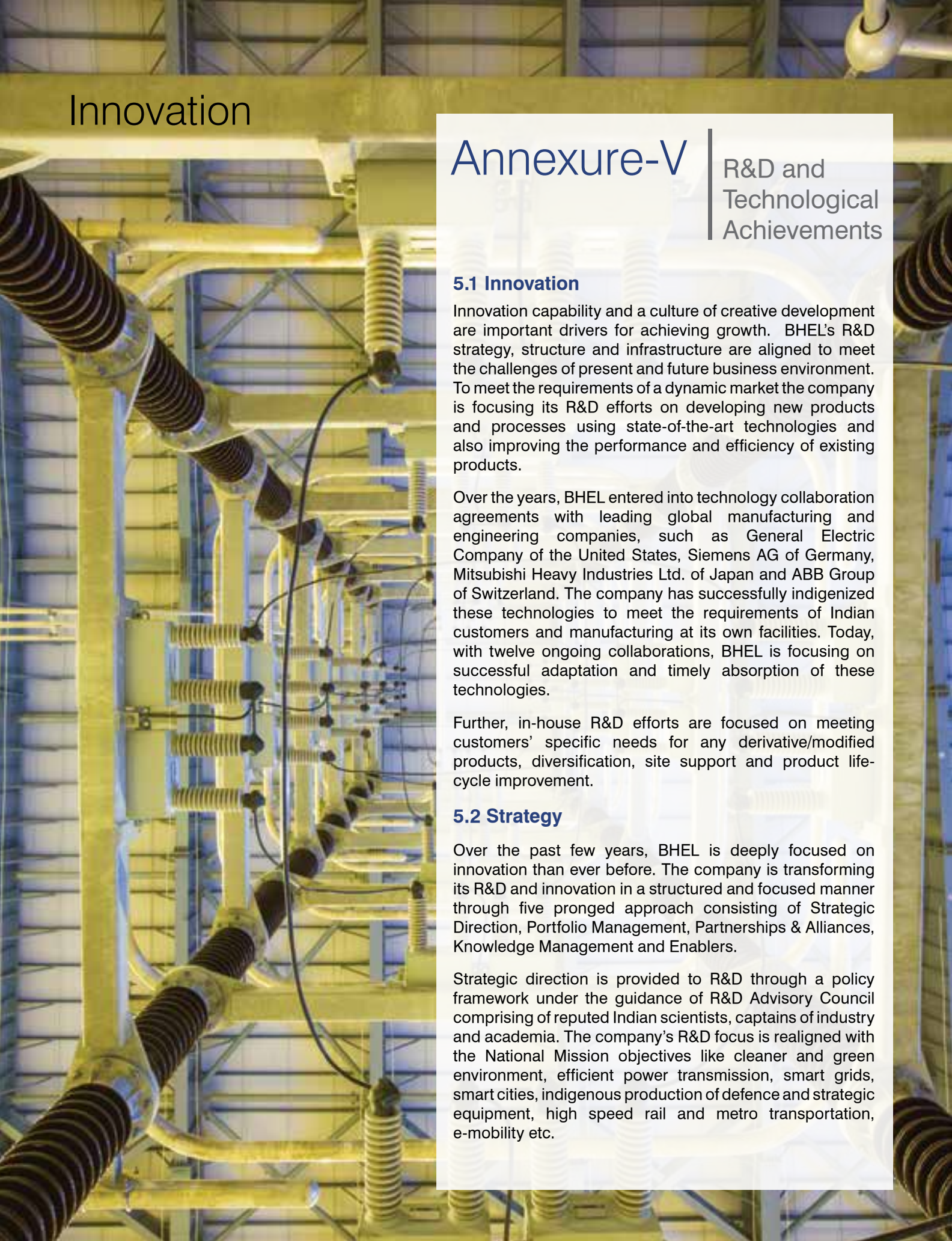
BHEL provides detailed Product Labels/ Name Plates/ Test Certificates to customers as per their requirement and terms of the contracts with them, besides the mandatory requirement of the applicable law.

Given the diverse and large scale operations of BHEL, customer complaints get registered through multiple modes. Two dedicated online complaint systems, i.e., Customer Complaint Management System (CCMS) and Site Action request (SAR)/ Commissioning Action Report (CAR) System have been introduced and are in operation. Apart from complaints, customer feedback is taken regularly through customer satisfaction surveys, customers' meets and face-to-face interactions.

There is no case filed by any stakeholder against the company regarding unfair trade practices, irresponsible advertising and/or anti-competitive behavior during the last five years and pending as on end of financial year i.e., 31-03-2016. ●



# Innovation



## Annexure-V

### R&D and Technological Achievements

#### 5.1 Innovation

Innovation capability and a culture of creative development are important drivers for achieving growth. BHEL's R&D strategy, structure and infrastructure are aligned to meet the challenges of present and future business environment. To meet the requirements of a dynamic market the company is focusing its R&D efforts on developing new products and processes using state-of-the-art technologies and also improving the performance and efficiency of existing products.

Over the years, BHEL entered into technology collaboration agreements with leading global manufacturing and engineering companies, such as General Electric Company of the United States, Siemens AG of Germany, Mitsubishi Heavy Industries Ltd. of Japan and ABB Group of Switzerland. The company has successfully indigenized these technologies to meet the requirements of Indian customers and manufacturing at its own facilities. Today, with twelve ongoing collaborations, BHEL is focusing on successful adaptation and timely absorption of these technologies.

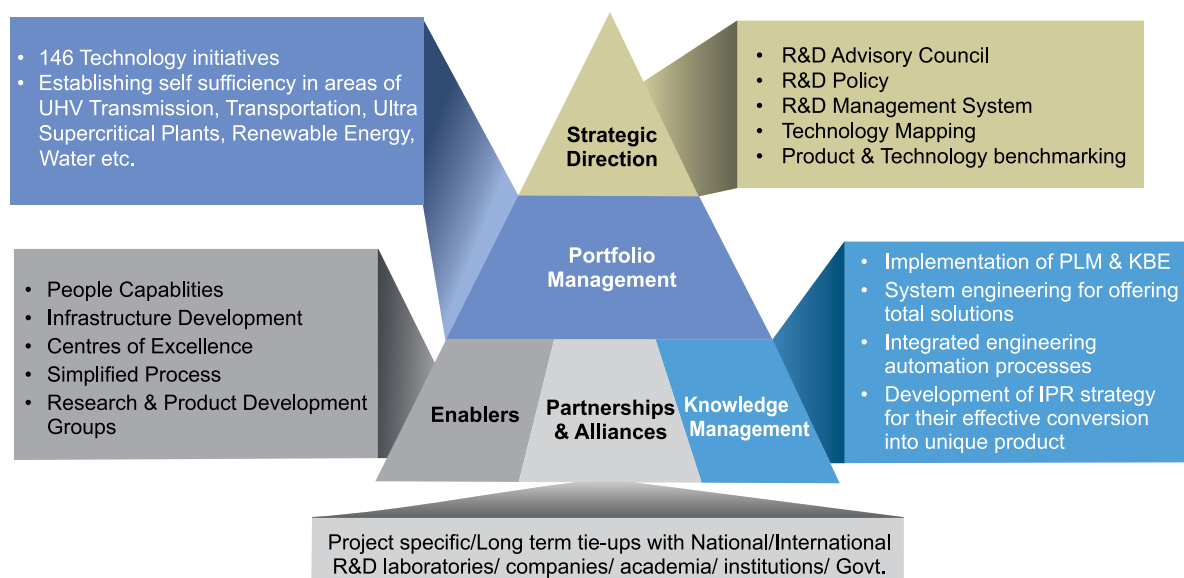
Further, in-house R&D efforts are focused on meeting customers' specific needs for any derivative/modified products, diversification, site support and product life-cycle improvement.

#### 5.2 Strategy

Over the past few years, BHEL is deeply focused on innovation than ever before. The company is transforming its R&D and innovation in a structured and focused manner through five pronged approach consisting of Strategic Direction, Portfolio Management, Partnerships & Alliances, Knowledge Management and Enablers.

Strategic direction is provided to R&D through a policy framework under the guidance of R&D Advisory Council comprising of reputed Indian scientists, captains of industry and academia. The company's R&D focus is realigned with the National Mission objectives like cleaner and green environment, efficient power transmission, smart grids, smart cities, indigenous production of defence and strategic equipment, high speed rail and metro transportation, e-mobility etc.





A portfolio of 15 missions leading to 146 technology initiatives are helping the company to build and consolidate capabilities in emerging and existing areas. All these projects are executed and monitored for successful completion within the plan period ending in 2017.

#### Major Mission Projects

- Establish capability for 800 MW Advanced Ultra supercritical Power plants with parameters 710 °C/310 ata covering design, engineering, manufacturing installation & commissioning
- In-house capability to establish grid connected Solar Power plant with matching BOS
- Develop in house capability for HVDC ( $\pm$  800 kV) transmission products/substations
- Develop total capability for transmission products/substation of GIS up to 765 kV
- 3-phase propulsion systems for all railways needs covering electric/diesel- electric loco, EMU, DEMU, MEMU, Coaches, metro and rolling stock addressing urban transportation
- Develop & commercialize applications in the area of emerging technologies like High temperature Superconducting (HTSC) Motor, Fuel cell up to 2 kW rating, efficiency improvement of crystalline silicon solar cells from 16% to 25%, etc.
- Water/sewage treatment plants for power plant, industrial/municipal and river clean-up applications

### 5.3 R&D Structure

R&D organizational structure of the company is headed by Director (E, R&D), supported by Corporate Technology Management at corporate level. Each product group in the manufacturing units has a dedicated Research & Product Development (RPD) group well complemented by the centralized Corporate Research & Development Division at Hyderabad. The company has structured approach for strengthening R&D infrastructure, consisting of laboratories at Corporate R&D and manufacturing Units, Centres of Excellence, Specialised Research Institutes, etc., well equipped with state-of-the-art R&D infrastructure and highly skilled manpower.

#### BHEL's area specific Research Institutes

- Pollution Control & Research Institute (PCRI), Haridwar
- Welding Research Institute (WRI), Trichy
- Ceramic Technological Institute (CTI), Bengaluru
- Centre for Electric Transportation (CET), Bhopal

- Amorphous Silicon Solar Cell Plant (ASSCP), Gurugram

In addition to this, BHEL has 14 Centers of Excellence including:

## At Hyderabad:

- Intelligent Machines and Robotics
- Machine Dynamics
- Compressors & Pumps
- Nano-technology
- UHV Laboratory
- Simulators
- Computational Fluid Dynamics
- Surface Engineering
- Permanent Magnet Machines
- Advanced Transmission Systems

## At Bengaluru:

- Power Electronics, IGBT & Controller Technology
- Centre of Excellence for Control and Instrumentation

## At Tiruchirappalli:

- Coal Research Centre
- Advanced Fabrication Technology

Innovation in engineering processes including managing its knowledge base is identified as focus area in these centers of innovation & technology development.

Continuing its focus on Knowledge Based Engineering (KBE) for reducing design cycle time and design optimization in all its products, BHEL has initiated a number of KBE projects to build expertise and facilitate KBE/PLM activities.

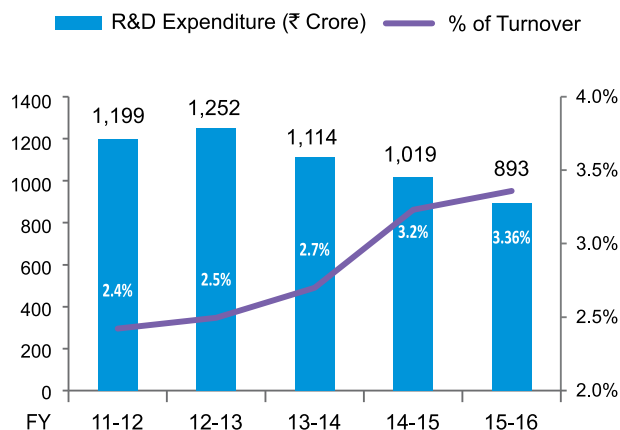
Further, with a view to bridge knowledge gaps BHEL has increased collaboration with academia and R&D Institutes for basic as well as applied research. Currently BHEL has Memorandum of Understanding (MoU) with over 15 leading academic and research institutes. The company is also putting in place all enablers like people capabilities, infrastructure, processes and organization support to succeed in its ambitious technology endeavours.

## 5.4 Achievements during the year

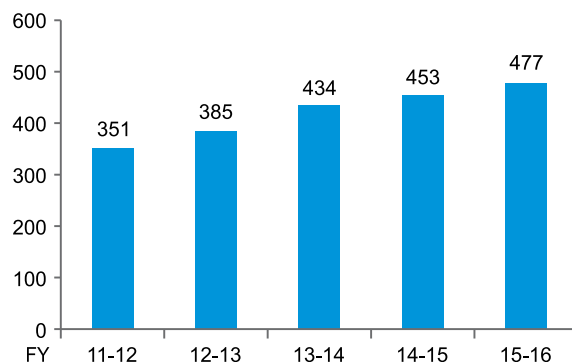
BHEL has recorded significant achievements on R&D performance parameters during the year. The R&D expenditure of the company for the current financial

year is ₹ 893.07 Crore which is 3.36% of the turnover. This includes the expenditure made at manufacturing units on R&D efforts gone into major modifications/improvements in product/ designs against customer requirements which are not covered in Corporate R&D projects. The company filed 477 patent and copyright applications during the year 2015-16, enhancing the company's intellectual capital to 3441. A total of ₹ 6675.68 Crore of the company's total turnover has been achieved from its in house developed products, introduced in past five years.

**R&D Expenditure**



**Filing of Patents & Copy Rights (Nos)**



During the year, there have been significant developments/ improvements in engineering, processes and products covering various business verticals like Power, Industry, Transportation and Renewables. Some notable achievements are:

- BHEL has developed and supplied 24 kV PR Class Oil Filled & Dry Type Current Transformer (CT) for Powergrid NE-Agra HVDC Project. A special anti-remanence test was conducted by third party as per IEC 61869 and the results

were accepted by ABB Sweden and PGCIL. With this development, BHEL has become the only indigenous manufacturer to supply 24 kV PR class CTs.



24 kV PR Class Oil Filled & Dry Type Current Transformer developed & supplied by BHEL for Powergrid NE-Agra HVDC project

- BHEL has developed water cooled IGBT Power stack for high power applications of STATCOM and industrial drives up to 5 MVA capacity. With this, BHEL can supply compact STATCOM and industrial drives up to 5 MVA with 3-level power circuit topology using water cooled IGBT power stack.



STATCOM up to 5 MVA developed & supplied by BHEL

- BHEL has developed a new variant 67.647 MVA, 57.75 MW, 13.8 kV, 3600 rpm Air Cooled Turbo-Generator with overhang brushless exciter for industrial application. The development has resulted in addition of a new variant (suitable for 60 Hz application) of air cooled TG to BHEL's existing portfolio of Turbo generators for industrial application. Two developed generators have been supplied to M/s GE-Triveni Ltd for their project in Philippines.
- BHEL has developed 5.925 MW, 11 kV, 10 Pole

slow speed ID fan motor which is the largest rating designed till date in 10 pole construction. The developed motor achieved efficiency better than global benchmark at full load for such ratings. This development has enabled BHEL to supply complete range of large rating slow speed ID fan motors for 660 MW & 800 MW super critical thermal power plants applications. Four numbers have been supplied for NTPC Gadawara.

- BHEL has developed 4.7 MW, 11 kV, 16 pole vertical synchronous motor with non-skew stator in salient type construction for lift irrigation sector. Twelve such motors have been supplied to Megha Engineering and Infrastructure Limited (MEIL).



4.7 MW, 11 kV, 16 pole vertical synchronous motor developed by BHEL for lift irrigation sector

- For industrial application BHEL has developed a new variant of 14 MW, 11 kV, 4 Pole Closed Air Circuit Water Cooled (CACW) alternator in ribbed shaft construction. This Alternator has been developed for the first time in top mounted construction with smoke detector. One such alternator has already been supplied to M/s Triveni.
- BHEL has developed a compact 1,850 kW, 2 pole compressor motor with an effective ventilation arrangement incorporating state of the art cooler and new generation high discharge blowers for India Glycol Ltd as a substitute for the imported machine being used by them.
- To cater to power requirement from 150 MW to 200 MW range for industrial application, BHEL has developed an efficient design of two cylinder steam turbine module which incorporates latest design features like advanced blading and compliant seals (brush seals).
- BHEL has developed a Remote Terminal Unit (RTU) with the latest industry communication



protocols for SCADA. This is a vital component of Distribution Management System (DMS) in Smart Grid to provide remote monitoring and control of a utility's distribution assets and networks.

- BHEL has developed a robot trajectory tracking system for welding applications which provides additional intelligence to the robot to track the path compensating dimensional changes due to welding process using a laser sensor. The tracking system improves the product quality as precise placement of welding torch, proper fusion with side walls of the work piece and uniform deposition are ensured.
- BHEL has developed process for manufacturing Nano-modified epoxy composites for HV Insulation Products. This development has resulted in superior electrical insulation properties like AC breakdown voltage (~28% higher), dielectric permittivity (~9% higher), higher electrical resistivity etc. and has potential to reduce weight and size of insulation materials in products like Seal off Bushings (SOB), Current Transformers (CT), and Potential Transformers (PT) etc.
- BHEL has developed and demonstrated 50 kWp SPV systems using horizontal axis passive sun trackers based on liquid balancing system. The tracking is fully automatic with the movement of liquid from one side of the panel array to the other side due to heat generated by solar energy. The trackers generate 15-20% extra energy in comparison to the modules mounted on the fixed tilt structures.



*BHEL has successfully developed and demonstrated 50kWp SPV systems using sun trackers based on liquid balancing system*

ceramic blocks. Successful completion of field performance has resulted in placement of order by TATA Steel and 1000 honeycomb blocks have already been supplied.

- BHEL has developed materials for high strength nanostructured honeycomb grinding rolls for coal pulverization to enhance life of grinding rolls. This development has resulted in improvement in life of bowl mill rolls from 3000-4000 hrs. to 12000 hrs.

### 5.5 Future focus areas

To meet the challenges of a changing business scenario while continuing development in traditional areas of business, BHEL has taken several technology development initiatives covering various business verticals viz. Power, Transportation, Transmission, Solar, Water, Defence and other areas. The company has undertaken projects in recent years with focus on low-carbon path technologies including faster assimilation of supercritical technology, development of Advanced Ultra Super Critical Technology, Solar PV & Thermal, 765/1200 kV Transmission System, GIS up to 765 kV,  $\pm 800$  kV HVDC system, IGBT based Propulsion Systems for higher rating Locos, EMU, Metro coaches, Electric powered vehicles, SPV based charging unit and Energy storage on mission mode.

The company is also engaged in development of emerging technologies like Fuel Cells for distributed environment friendly power generation, development of new materials with addition of Nano-/micro-particles for improving characteristics, superconducting application in Motors, Generators and Transformers etc. ●

- BHEL has entered the new market segment of Thermal Energy Storage products by successfully developing multi channeled honeycomb

# Annexure-VI

## Corporate Governance

### 6.1 Philosophy on Corporate Governance

BHEL has established a sound framework of Corporate Governance which underlines commitment to quality of governance, transparency disclosures, consistent stakeholders' value enhancement and corporate social responsibility. BHEL endeavours to transcend much beyond the regulatory framework and basic requirements of Corporate Governance, focusing consistently towards building confidence of its various stakeholders including shareholders, customers, employees, suppliers and the society at large. The company has developed a framework for ensuring transparency, disclosure and fairness to all, especially minority shareholders.

The Corporate Governance Policy of BHEL rests upon the four pillars of transparency, full disclosure, independent monitoring and fairness to all. To strengthen this, BHEL has signed an MoU with Transparency International to adopt 'Integrity Pact'. Our corporate structure, business procedures and disclosure practices have attained a sound equilibrium with our Corporate Governance policy resulting in achievement of goals as well as high level of business ethics. BHEL's Corporate Governance policy is based on the following principles:

- i) Independence and versatility of the Board
- ii) Integrity and ethical behaviour of all personnel
- iii) Recognition of obligations towards all stakeholders – shareholders, customers, employees, suppliers and the society

- iv) High degree of disclosure and transparency levels
- v) Total compliance with laws in all areas in which the company operates
- vi) Achievement of above goals with compassion for people and environment

The company believes that conducting business in a manner that complies with the Corporate Governance procedures and Code of Conduct, exemplifies each of our core values and positions us to deliver long-term returns to our shareholders, favourable outcomes to our customers, attractive opportunities to our employees and making the suppliers our partners in progress & enriching the society.

### 6.2 Board of Directors

#### i. Composition & Category of Directors

Pursuant to Section 2(45) of the Companies Act, 2013, BHEL is a 'Government Company' as 63.06% of the total paid-up share capital of the company is held by the Central Government through the President of India.

The composition of Board of Directors of BHEL has an appropriate mix of Executive Directors represented by Functional Directors including CMD and Non-Executive Directors represented by Government nominees & Independent Directors, to maintain the independence of the Board and to separate the functions of Board w.r.t management and control. As the Chairman is an Executive Director, Independent Directors comprise 50% of the composition of the Board.

The composition of the Board of Directors is as follows:

Particulars	Board Structure	Actual Strength as on 31.03.2016
Chairman & Managing Director	1	1
Whole-time Executive (Functional) Directors	5	4
Part-time Official Directors (Government nominees) representing the Ministry of Heavy Industries & Public Enterprises, Govt. of India	2	2
Part-time Non-official (Independent) Directors	8	5
<b>TOTAL</b>	<b>16</b>	<b>12</b>

As on 31<sup>st</sup> March, 2016, there existed one vacancy of Director (Power) and three vacancies of Part-time Non-official (Independent) Directors on the Board of BHEL. The matter of filling up of these vacancies is under consideration of Department of Heavy Industry, Ministry of Heavy Industries & Public Enterprises, Govt. of India.

**ii. Attendance of each Director at the Board Meetings held during 2015-16 and the last AGM**

Director's Name S/shri	No. of Board Meetings		Last AGM (held on 22.09.2015)
	Held	Attended	

**EXECUTIVE DIRECTORS**

Atul Sobti, Chairman & Managing Director (w.e.f. 01.01.2016) #	2	2	Yes
Atul Sobti, Director (Power) (up to 31.12.2015) \$	8	8	
B. Prasada Rao, Chairman & Managing Director (up to 31.12.2015) @	8	7	Yes
P.K. Bajpai, Director (Finance) (up to 31.05.2015)	2	2	*
R. Krishan, Director (HR) (up to 31.07.2015)	3	3	*
W.V.K Krishna Shankar, Director (IS&P) (up to 31.08.2015)	5	5	*
T. N. Veeraraghavan, Director (E,R&D) (up to 30.06.2015)	2	2	*
D. Bandyopadhyay, Director (HR) (w.e.f. 01.08.2015)	7	7	Yes
Amitabh Mathur, Director (IS&P) (w.e.f. 01.09.2015)	5	5	Yes
Subrata Biswas, Director (E,R&D) (w.e.f. 24.09.2015)	4	4	*
T. Chockalingam, Director (Finance) (w.e.f. 11.02.2016 A.N.)	1	1	*

**PART-TIME OFFICIAL DIRECTORS – GOVT. NOMINEES**

Dr. Subhash Chandra Pandey, Additional Secretary & Financial Adviser, Department of Industrial Policy and Promotion, Ministry of Commerce & Industry (w.e.f. 31.03.2016)	-	-	*
S.K. Bahri, Additional Secretary & Financial Adviser, Department of Industrial Policy and Promotion, Ministry of Commerce & Industry (up to 29.02.2016)	10	9	No
Rajesh Kumar Singh, Joint Secretary, Department of Heavy Industry, Ministry of Heavy Industries & Public Enterprises	10	7	Yes



**PART-TIME NON-OFFICIAL (INDEPENDENT) DIRECTORS**

Ms. Harinder Hira	10	8	Yes
A.N. Roy	10	9	Yes
Rajesh Kishore (w.e.f. 18.12.2015)	3	3	*
Keshav N. Desiraju (w.e.f. 18.12.2015)	3	3	*
R. Swaminathan (w.e.f. 18.12.2015)	3	3	*

# Shri Atul Sobti, CMD (w.e.f. 01.01.2016) held additional charge of Director (Finance) from 01.01.2016 to 11.02.2016 F.N. He is also holding additional charge of Director (Power) w.e.f. 01.01.2016.

\$ Shri Atul Sobti, Director (Power) upto 31.12.2015 held additional charge of Director (Finance) w.e.f. 01.06.2015 to 31.12.2015.

@ Shri B. Prasada Rao, Ex-CMD held additional charge of Director (E,R&D) w.e.f. 01.07.2015 up to 23.09.2015.

\* denotes the respective person was not a Director of BHEL as on last AGM date.

**iii. Details of Directorships, Committee Memberships and Committee Chairmanship in other companies as on 31<sup>st</sup> March, 2016**

Director's name S/shri	Details of Directorships in other Companies	Details of Committee Memberships and Committee Chairmanship in other Companies*
Atul Sobti Chairman & Managing Director	Raichur Power Corporation Ltd.	-NIL-
D. Bandyopadhyay Director (HR)	1. Dada Dhuniwale Khandwa Power Ltd. 2. NTPC BHEL Power Projects Pvt. Ltd.	-NIL-
Amitabh Mathur Director (IS & P)	1. Dada Dhuniwale Khandwa Power Ltd. 2. Indian Electrical & Electronics Manufacturer's Association	<b>Audit Committee:</b> Dada Dhuniwale Khandwa Power Ltd. (Chairman)
Subrata Biswas Director(E,R&D)	-NIL-	-NIL-
T. Chockalingam Director (Finance)	-NIL-	-NIL-
Dr. Subhash Chandra Pandey Part-time Official Director	-NIL-	-NIL-
Rajesh Kumar Singh Part-time Official Director	1. Engineering Projects (India) Ltd. 2. Tide Water Oil Co India Ltd.	<b>Audit Committee:</b> 1. Engineering Projects(India) Ltd. (Member) 2. Tide Water Oil Co India Ltd. (Member)

Director's name S/shri	Details of Directorships in other Companies	Details of Committee Memberships and Committee Chairmanship in other Companies*
Ms. Harinder Hira Part-time Non-official Director	-NIL-	-NIL-
A.N. Roy Part-time Non-official Director	1. India Venture Advisors Pvt. Ltd. 2. HDFC Bank Ltd. 3. Vandana Foundation (Section 8 Company) 4. GlaxoSmithKline Pharmaceuticals Ltd. 5. Mayar Infrastructure Development Pvt. Ltd. 6. Mayar Health Resorts Ltd. 7. Skills Academy Pvt. Ltd.	<b>Audit Committee:</b> HDFC Bank Ltd. (Member)  <b>Stakeholders' Relationship Committee:</b> HDFC Bank Ltd. (Chairman)
Rajesh Kishore Part-time Non-official Director	-NIL-	-NIL-
Keshav N. Desiraju Part-time Non-official Director	Tamil Nadu Infrastructure Fund Management Corporation Ltd.	-NIL-
R. Swaminathan Part-time Non-official Director	-NIL-	-NIL-

\*Only Chairmanship/ Membership of the Audit Committee and Stakeholders' Relationship Committee has been considered.

No Director of the company holds office at the same time as Director in more than twenty (20) companies. No Director of the company is a member in more than ten (10) Committees or is a Chairman of more than five (5) Committees across all companies in which he is a Director.

Disclosure of relationship between Directors inter-se:  
NIL

#### iv. No. of Board Meetings held, dates on which held

The meetings of the Board are normally held at the company's Registered Office in New Delhi and are scheduled well in advance. The Company Secretary, in consultation with the Chairman & Managing Director, sends a written notice of each Board meeting to each Director. The Board agenda is circulated to the Directors in advance.

The members of the Board have access to all information of the company and are free to recommend

inclusion of any matter in agenda for discussion. In case of need, the senior management is invited to attend the Board Meetings to provide additional inputs relating to the items being discussed and/ or to give presentation to the Board. The Board meets at least once in a quarter to review the quarterly results and other items on the agenda. Additional meetings are held, when necessary.

During the year under review, the Board met ten times on the following dates:

- |                        |                          |
|------------------------|--------------------------|
| (i) April 6, 2015      | (ii) May 26, 2015        |
| (iii) July 24, 2015    | (iv) August 7, 2015      |
| (v) August 31, 2015    | (vi) September 24, 2015  |
| (vii) November 6, 2015 | (viii) December 28, 2015 |
| (ix) January 12, 2016  | (x) February 11, 2016    |

#### v. Board's Responsibilities

The Board's mandate is to oversee the company's

strategic direction, review and monitor corporate performance, ensure regulatory compliance and safeguard the interests of the shareholders.

#### **vi. Role of Independent Directors**

The Independent Directors play an important role in deliberations at the Board and Committee meetings and bring to the company their expertise in the fields of engineering, finance, management, law and public policy.

The Independent Directors are part of important Committees constituted by the Board such as the Audit Committee, Nomination & Remuneration Committee and CSR Committee. In terms of Companies Act, 2013 and Listing Regulations, the Audit Committee and the Nomination & Remuneration Committee are chaired by an Independent Director and function within their respective defined terms of references.

Further, in line with DPE OM dated 28<sup>th</sup> December, 2012 on Model Role & Responsibilities of Non-Official Directors for CPSEs, the Board had constituted a Committee of Independent Directors. The said Committee is in compliance with the requirements of Listing Regulations and the Code of Independent Directors under Companies Act, 2013. The minutes of all the Board Level Committee Meetings are circulated and discussed in the Board Meetings. Details regarding familiarization programme of Independent Directors are available on the website of the company 'www.bhel.com' at web link 'http://www.bhel.com/investor\_relations/investor.php' under the heading 'Familiarisation Programme for Independent Directors'.

#### **vii. Information placed before the Board of Directors**

The information under the following heads are usually presented to the Board of Directors of BHEL either as part of the agenda papers or are tabled/ presented during the course of Board meetings:

- Annual operating plans and budgets and any updates.
- Capital budgets and any updates.
- Quarterly results for the company and its operating divisions or business segments.
- Minutes of meetings of Audit Committee and other Committees of the Board.
- Minutes of Board Meetings of unlisted subsidiary companies.
- Statement of all significant transactions and arrangements entered into by unlisted subsidiary companies.
- The information on recruitment of senior officers just below the Board level.
- Details of any Joint Venture or R&D project or technical collaboration agreement requiring approval of Board of Directors.
- Significant labour problems and their proposed solutions. Any significant development in Human Resources/ Industrial Relations front like signing of wage agreement, implementation of Voluntary Retirement Scheme etc.
- Sale of material, nature of investments, subsidiaries, assets, which is not in normal course of business.
- Quarterly details of foreign exchange exposures and the steps taken by management to limit the issues of adverse exchange rate movement, if material.
- Action Taken Report on matters desired by the Board.
- Disclosure of Interest by Directors about directorships and Committee positions occupied by them in other companies.
- Quarterly report on compliance of various laws.
- Information relating to major legal disputes.
- Status of Arbitration cases.
- Short term investment of surplus funds.
- Any contract(s) in which Director(s) are deemed to be interested.
- Status of shareholders' grievances on quarterly basis.
- Significant Capital Investment proposals.
- Changes in significant accounting policies & practices and reasons for the same.
- Performance of various units/functions.
- Any other information required to be presented to the Board either for information or approval.

#### **viii. Selection of New Directors**

As per Articles of Association of BHEL, the President of India through Department of Heavy Industry, Ministry of Heavy Industries & Public Enterprises, appoints the Chairman & Managing Director, Functional Directors & Part-time Official Directors on the Board of BHEL and also nominates Part-time Non-official (Independent) Directors on the Board of BHEL.



The Independent Directors are selected by the Department of Heavy Industry in consultation with the Search Committee of the Department of Public Enterprises which maintains a panel of eminent personalities having wide experience in the field of Management, Finance, Engineering, Administration and Industry.

#### ix. Membership term & Retirement policy

The appointment of Chairman & Managing Director and Functional Directors shall be on such terms and conditions, remuneration and tenure as the President of India may from time to time determine.

Two Part-time Official Directors viz. Additional Secretary/Joint Secretary, Department of Heavy Industry, Ministry of Heavy Industries & Public Enterprises and Additional Secretary & Financial Adviser, Ministry of Commerce and Industry are nominated by the Govt. of India on the Board of BHEL. They continue to be on the Board of BHEL at the discretion of the Govt. of India.

The tenure of Part-time Non-official (Independent) Directors is decided by the Department of Heavy Industry. Normally, an Independent Director is appointed for a period of three years.

#### x. Code of Conduct

As part of BHEL's persisting endeavour to set a high standard of conduct for its employees, a 'Code of Business Conduct and Ethics' was laid down for all Board Members and Senior Management personnel and the same was revised in line with changes in the regulatory framework & changing business dynamics and to incorporate other relevant provisions to strengthen the Code. Pursuant to erstwhile Listing Agreement with the Stock Exchanges, the Board of Directors of BHEL in its 465<sup>th</sup> meeting held on 14<sup>th</sup> November, 2014 revised and approved the "Code of Business Conduct & Ethics for Board Members and Senior Management Personnel" of the company. The Code is also in compliance with the current Listing Regulations. The Code encompasses:

- General Moral Imperatives;
- Specific Professional Responsibilities; and
- Specific Additional Provisions for Board Members and Senior Management Personnel.

A copy of the said revised Code has been placed on the company's website '[www.bhel.com](http://www.bhel.com)'.

#### xi. Charter of the Board of Directors

For the purpose of clearly defining the roles and responsibilities of the Board and individual Directors, the Board has laid down a Charter of the Board of Directors. The Charter also articulates our corporate governance objectives and approach.

In line with the DPE guidelines, listing agreement and with the objective of providing the Directors a) insight into guidelines and procedures for successful discharge of their statutory duties, b) better understanding of the business environment to envision the future and develop strategies and c) need based training to meet the Specific requirements of the board members, BHEL Board has approved a policy for Training of Directors. It covers both general and specific trainings more tuned towards company specific areas.

#### xii. CEO/CFO certification

CEO / CFO certification pursuant to Listing Regulations is enclosed at **Annexure-II** of the Directors' Report.

### 6.3 Board Level Audit Committee

#### i. Terms of Reference

The terms of reference of the Board Level Audit Committee specified by the Board are in conformity with the requirements of Section 177 of the Companies Act, 2013 as well as Listing Regulations and are as follows:

1. Oversight of the company's financial reporting process and the disclosure of its financial information to ensure that the financial statement is correct, sufficient and credible;
2. Recommendation for appointment, remuneration and terms of appointment of auditors of the company;
3. Approval of payment to statutory auditors for any other services rendered by the statutory auditors;
4. Reviewing, with the management, the annual financial statements and auditor's report thereon before submission to the board for approval, with particular reference to:
  - i. Matters required to be included in the Director's Responsibility Statement to be included in the Board's report in terms of clause (c) of sub-section 3 of section 134 of the Companies Act, 2013;

- ii. Changes, if any, in accounting policies and practices and reasons for the same;
  - iii. Major accounting entries involving estimates based on the exercise of judgment by management;
  - iv. Significant adjustments made in the financial statements arising out of audit findings;
  - v. Compliance with listing and other legal requirements relating to financial statements;
  - vi. Disclosure of any related party transactions;
  - vii. Qualifications in the draft audit report;
5. Reviewing, with the management, the quarterly financial statements and auditor's report thereon before submission to the board for approval;
  6. Reviewing, with the management, the statement of uses/ application of funds raised through an issue (public issue, rights issue, preferential issue, etc.), the statement of funds utilized for purposes other than those stated in the offer document/ prospectus/ notice and the report submitted by the monitoring agency monitoring the utilization of proceeds of a public or rights issue and making appropriate recommendations to the Board to take up steps in this matter;
  7. Review and monitor the auditor's independence and performance and effectiveness of audit process;
  8. Approval or any subsequent modification of transactions of the company with related parties;
  9. Scrutiny of inter-corporate loans and investments;
  10. Valuation of undertakings or assets of the company, wherever it is necessary;
  11. Evaluation of internal financial controls and risk management systems;
  12. Reviewing, with the management, performance of statutory and internal auditors, adequacy of the internal control systems;
  13. Reviewing the adequacy of internal audit function, if any, including the structure of the internal audit department, staffing and seniority of the official heading the department, reporting structure coverage and frequency of internal audit;
  14. Discussion with internal auditors of any significant findings and follow up there on;
  15. Reviewing the findings of any internal investigations by the internal auditors into matters where there is suspected fraud or irregularity or a failure of internal control systems of a material nature and reporting the matter to the board;
  16. Discussion with statutory auditors before the audit commences, about the nature and scope of audit as well as post-audit discussion to ascertain any area of concern;
  17. To look into the reasons for substantial defaults in the payment to the depositors, debenture holders, shareholders (in case of non-payment of declared dividends) and creditors;
  18. To review the functioning of the Whistle Blower/ Vigil mechanism;
  19. To review the Audit paras referred to BLAC by the Internal Audit / Board and / or Govt. of India and to provide its suggestions / guidance / comments on the issues referred to it;
  20. Discussion with Statutory Auditors/Internal Auditors periodically about internal control systems;
  21. To seek professional advice from external sources in appropriate cases, wherever required;
  22. The Audit Committee shall also review the following information:
    - a. Management discussion and analysis of financial condition and results of operations;
    - b. Statement of significant related party transactions;
    - c. Management letters / letters of internal control weaknesses issued by the statutory auditors; and
    - d. Internal audit reports relating to internal control weaknesses;
  23. Carrying out any other function as is mentioned in the terms of reference of the Audit Committee.
- ii. Composition of Committee, name of Members & Chairperson**
- The Audit Committee comprises of at least 2/3<sup>rd</sup> members as Independent Directors as mandated by the Listing Regulations. Further, the Committee is chaired by an Independent Director. The member directors comprise of professionals of repute and standing with background in commerce, finance, administration and governance.

The Audit Committee was last reconstituted on 12<sup>th</sup> January, 2016. The Committee comprises of the following Directors:

Name of the Director S/ shri	Position	No. of Meetings held during their tenure	No. of Meetings Attended
A.N. Roy (Part-time Non-official Director)	Chairperson	8	8
Rajesh Kumar Singh (Part-time Official Director)	Member	8	7
Ms. Harinder Hira (Part-time Non-official Director)	Member	8	7
Rajesh Kishore (Part Time Non-official Director)	Member (w.e.f. 12.01.2016)	2	2

Director (Finance) is permanent invitee. Company Secretary shall act as Secretary to the Committee.

Head of Internal Audit and a representative of the Statutory Auditor may be present as invitees for the meetings of the Audit Committee. The Auditors of the company and the Key Managerial Personnel shall have a right to be heard in the meetings of the Audit Committee when it considers the Auditor's Report but shall not have the right to vote.

### iii. Meetings and Attendance

The Audit Committee met eight times on 6<sup>th</sup> April, 2015, 26<sup>th</sup> May, 2015, 23<sup>rd</sup> July, 2015, 7<sup>th</sup> August, 2015, 6<sup>th</sup> November, 2015, 12<sup>th</sup> January, 2016, 11<sup>th</sup> February, 2016 and 15<sup>th</sup> March, 2016 during the year under review. The detail of attendance of each member is given in the aforementioned table.

## 6.4 Nomination and Remuneration Committee

### i. Remuneration Policy

BHEL being a Public Sector Undertaking, the appointment and remuneration of CMD/ Functional Directors are decided by the Govt. of India. The terms of appointment of CMD/ Directors, as approved by the President of India, provide for fixation of certain perks and benefits like leased accommodation, payment of HRA, furnished accommodation, productivity linked incentive etc., as per rules of BHEL. The part-time non-executive directors are not paid any remuneration

except sitting fees to Independent Directors for attending meetings of the Board or Committee thereof.

### ii. Terms of Reference

In line with the requirements of Section 178 of the Companies Act, 2013 and Clause 49 of the erstwhile Listing Agreement (now Listing Regulations), the Board constituted the Nomination & Remuneration Committee (NRC) w.e.f. 30<sup>th</sup> March, 2015 having the following terms of reference:

- To identify persons who are qualified to become Directors and who may be appointed in senior management in accordance with the criteria laid down and recommend to the Board for their appointment and removal and to carry out evaluation of every Director's performance. Senior Management means personnel of the company who are members of its core management team excluding Board of Directors comprising all members of management one level below the Executive Directors, including the functional heads.
- To formulate the criteria for determining qualifications, positive attributes and independence of a Director and recommend to the Board a policy, relating to the remuneration of the Directors, Key Managerial Personnel and other employees in compliance with the provisions of Act/ LA/ DPE guidelines.
- Formulation of criteria for evaluation of Independent Directors and the Board.
- Devising a policy on Board diversity.
- To recommend to the Board, nomination of BHEL officials in the Boards of its subsidiaries and other government organizations which are required to be approved by the Board of BHEL before further submission to DHI.
- Oversight of the company's policy on specific remuneration packages, perquisites for Whole-time Directors including pension rights and any compensation payment, which are not fixed by the President of India.
- Approve certain perquisites for Whole-time Directors which are within the powers of Board. Review of the elements of remuneration package of Individual Directors summarized under major groups, such as incentives/benefits, bonus, stock options, pension etc.
- Finalization of policies on perks and benefits and other related matters which are not fixed by the President of India but within the powers of Board.



- i) Approval of fixed component and performance linked incentives based on the performance criteria.
- j) Finalization of the criteria of making payments to Non-Executive Directors.
- k) Recommendation of fees/compensation/stock options, if any, to be paid/granted, to Non-Executive Directors, including Independent Directors, to the Board of Directors/ Shareholders.
- l) To decide the bonus/ variable pay pool and policy for its distribution across the executives and non-unionised supervisors.
- m) Carrying out any other function related to the terms of reference of the NRC.

Ministry of Corporate Affairs (MCA) vide Notification dated 5-6-2015 provided that Section 178 (2) of the Companies Act, 2013 with regard to performance evaluation of Directors shall not apply to Government Company.

### iii. Composition of Committee, name of Members & Chairperson

The Committee comprises of the following Directors:

Name of the Director S/ shri	Position	No. of Meetings held during their tenure	No. of Meetings Attended
Ms. Harinder Hira (Part-time Non-official Director)	Chairperson	3	3
S.K. Bahri (Part-time Official Director) (up to 29.02.2016)	Member	3	3
Rajesh Kumar Singh (Part-time Official Director)	Member	3	3
A.N. Roy (Part-time Non-official Director)	Member	3	3

Director (HR) is permanent invitee. Company Secretary shall act as Secretary to the Committee.

### iv. Meetings and Attendance

The Nomination & Remuneration Committee met three times on 23<sup>rd</sup> July, 2015, 28<sup>th</sup> December, 2015 (adjourned from 6<sup>th</sup> November, 2015 due to lack of quorum) and 12<sup>th</sup> January, 2016 during the year under review. The detail of attendance of each member is given in the aforementioned table.

### v. Details of remuneration of Functional Directors during the year 2015-16 are given below:-

(in ₹)

Sl. No.	Name of the Director S/ shri	Salary	Benefits	Performance Linked Incentives *	Total	Service Contract/ Notice Period Severance Fee
1	Atul Sobti	2829853	365668	185027	3380548	--
2	B. Prasada Rao (up to 31.12.2015)	2157108	6046259	328026	8531393	--
3	P.K. Bajpai (up to 31.05.2015)	417324	4691884	186824	5296032	--
4	T.N. Veeraraghavan (up to 30.06.2015)	609348	4329215	194704	5133267	--
5	R. Krishnan (up to 31.07.2015)	820275	4003714	201925	5025914	--

Sl. No.	Name of the Director S/ shri	Salary	Benefits	Performance Linked Incentives *	Total	Service Contract/ Notice Period Severance Fee
6	W.V.K. Krishna Shankar (up to 31.08.2015)	1027309	4129849	197633	5354791	--
7	D. Bandyopadhyay (w.e.f. 01.08.2015)	1814278	601312	0	2415590	Liable to retire by rotation
8	Amitabh Mathur (w.e.f. 01.09.2015)	1639901	212796	0	1852697	Liable to retire by rotation
9	Subrata Biswas (w.e.f. 24.09.2015)	1272402	682001	0	1954403	Liable to retire by rotation
10	T. Chockalingam (w.e.f. 11.02.2016)	330951	86140	0	417091	Liable to retire by rotation

\* Performance Linked Incentive for s.no. 1 to 6 includes provisional PRP for the FY 2014-15

vi. Details of payments made to Independent Directors during the year 2015-16 are given below:-

(in ₹)

Name of the Independent Directors	Sitting Fees		Total
	Board Meeting	Committee Meeting	
Ms. Harinder Hira	160000	300000	460000
Shri A.N. Roy	180000	180000	360000
Shri Rajesh Kishore	60000	60000	120000
Shri Keshav N. Desiraju	60000	15000	75000
Shri R. Swaminathan	60000	30000	90000

Independent Directors were entitled for sitting fee @ ₹20,000/- per Board Meeting and ₹ 15,000/- per Board Level Committee Meeting attended by them. They are not entitled to Stock Option.

vii. Equity Shares held by Directors

As on 31<sup>st</sup> March, 2016, except Shri Atul Sobti, Chairman & Managing Director who is holding 1500 shares, none of the Directors, hold any Equity Shares in BHEL.

The company has not issued any stock options during the year 2015-16.

## 6.5 Shareholders' Committees

### 6.5.1. Stakeholders Relationship Committee

#### i. Terms of Reference

The Board of Directors on 12<sup>th</sup> May, 2014 reconstituted the Shareholders'/Investors' Grievance Committee as the Stakeholders Relationship Committee in line with the requirements of Companies Act, 2013 and erstwhile Listing Agreement. The Committee is also in compliance with the Listing Regulations. The Committee looks into the redressal of grievances of shareholders, debenture holders and other security holders including complaints related to transfer of shares, non-receipt of balance sheet, non-receipt of declared dividends etc.

## ii. Composition of Committee, name of Members & Chairperson

The Stakeholders Relationship Committee was last reconstituted on 12<sup>th</sup> January, 2016. The Committee comprises of the following directors:

Name of the Director S/ shri	Position	No. of Meetings held during their tenure	No. of Meetings Attended
R. Swaminathan (Part-time Non-official Director)	Chairperson (w.e.f. 12.01.2016)	1	1
Rajesh Kumar Singh (Part-time Official Director)	Chairperson (up to 11.01.2016)	4	3
	Member (w.e.f. 12.01.2016)	1	1
Director (Finance)	Member	5	5
Director (HR)	Member	5	5

Company Secretary shall act as Secretary to the Committee.

Shri I.P. Singh, Company Secretary is the Compliance Officer in terms of the SEBI (Listing Obligations & Disclosure Requirements) Regulations, 2015.

## iii. Meetings and Attendance

The Committee met five times on 25<sup>th</sup> May, 2015, 23<sup>rd</sup> July, 2015, 5<sup>th</sup> November, 2015, 12<sup>th</sup> January, 2016 and 11<sup>th</sup> February, 2016 during the year under review. The detail of attendance of each member is given in the aforementioned table.

### Detail of shareholders' complaints

As reported by Karvy Computershare Private Limited (RTA) to SEBI, 468 complaints were received from the shareholders during the year under review and all complaints were redressed up to 31<sup>st</sup> March, 2016. No complaint was pending at the end of the period under report.

### 6.5.2 Share Transfer Committee

The Board constituted a Share Transfer Committee on 25<sup>th</sup> March, 1992, which comprises Chairman & Managing Director, Director (Power) and Director (Finance) of the company. The Board of Directors revised the terms of reference of the Committee w.e.f. 1<sup>st</sup> August, 2014. The Share Transfer Committee will consider and approve all share related issues, other than transfer of shares viz. transposition, sub-division, consolidation, issue of duplicate share certificate etc. in physical mode. The Share Transfer Committee was last reconstituted on 12<sup>th</sup> January, 2016 and comprises Chairman & Managing Director, Director (Finance) and Director (HR).

### Meetings during 2015-16

The Share Transfer Committee met 14 times during the year. The minutes of the Share Transfer Committee meetings are periodically placed before the Board of Directors.

## 6.6 Board Level Committee for Corporate Social Responsibility

### i. Terms of Reference

Pursuant to the DPE Guidelines on Corporate Social Responsibility for CPSEs, the Board constituted the Board Level Apex Committee for CSR on 25<sup>th</sup> November, 2010 for proper & periodic monitoring of CSR activities. The Committee is presently christened as the Board Level Committee for Corporate Social Responsibility. The Board of Directors in its meeting held on 12<sup>th</sup> May, 2014 reconstituted the Committee in line with requirements of Companies Act, 2013. The terms of reference of the Committee are as under:

1. Formulation and recommendation to the Board the Corporate Social Responsibility Policy which shall indicate the activities to be undertaken by the company as specified in Schedule VII to the Companies Act, 2013;
2. Recommendation of the Projects, Programs and amount of expenditure to be incurred on the activities referred to in clause (1);
3. Monitoring the Corporate Social Responsibility activities of the company from time to time; and



4. Ensuring compliance with guidelines on Corporate Social Responsibility and Sustainable Development issued by the Govt. of India from time to time.

## ii. Composition of Committee, name of Members & Chairperson

The Committee was last reconstituted w.e.f. 30<sup>th</sup> December, 2014. The Committee comprises of the following Directors:

Name of the Director S/ shri	Position	No. of Meetings held during their tenure	No. of Meetings Attended
Ms. Harinder Hira (Part-time Non-official Director)	Chairperson	5	5
Rajesh Kumar Singh (Part-time Official Director)	Member	5	4
Director (Finance)	Member	5	5
Director (HR)	Member	5	5

Head (CSR)-ED/GM In-charge, Corporate Office is Permanent Invitee. Company Secretary shall act as Secretary to the Committee.

## iii. Meetings and Attendance

The Committee met five times during the year on 25<sup>th</sup> May, 2015, 23<sup>rd</sup> July, 2015, 5<sup>th</sup> November, 2015, 12<sup>th</sup> January, 2016 (adjourned from 5<sup>th</sup> January, 2016 due to lack of quorum) and 11<sup>th</sup> February, 2016. The detail of attendance of each member is given in the aforementioned table.

## 6.7 HR Committee

### i. Terms of Reference

The Board constituted the HR Committee on 31<sup>st</sup> May, 2006 specifically to look into the following matters:

- a. Review of present policies with respect to promotion and reward/incentive to the Executives.
- b. Suggest both short term and long term changes in the policies to prepare BHEL for the changed/emerging business environment.

## ii. Composition of Committee, name of Members & Chairperson

The HR Committee was last reconstituted on 12<sup>th</sup> January, 2016. The Committee comprises of the following Directors:

Name of the Director S/ shri	Position	No. of Meetings held during their tenure	No. of Meetings Attended
Rajesh Kishore (Part-time Non-official Director)	Chairperson (w.e.f. 12.01.2016)	1	1
Director (Finance)	Member	1	1
Director (HR)	Member	1	1

Head (HR)-ED/ GM In-charge, Corporate Office is permanent invitee. Company Secretary shall act as Secretary to the Committee.

## iii. Meetings and Attendance

The HR Committee met once during the year on 15<sup>th</sup> March, 2016. The detail of attendance of each member is given in the aforementioned table.

## 6.8 Committee of Independent Directors

### i. Terms of Reference

The Board, in line with DPE OM dated 28<sup>th</sup> December, 2012 on Model Role & Responsibilities of Non-Official Directors for CPSEs, constituted a Committee of Independent Directors, which is also in compliance with the requirements of Schedule IV of the Companies Act, 2013 and Listing Regulations.

## ii. Composition of Committee, name of members & Chairperson

The Committee comprises of the following Independent Directors:

Name of the Director S/ shri	Position	No. of Meetings held during their tenure	No. of Meetings Attended
Ms. Harinder Hira	Chairperson & Lead Independent Director	1	1
A.N. Roy	Member	1	1
Rajesh Kishore	Member	1	1
Keshav N. Desiraju	Member	1	1
R. Swaminathan	Member	1	1

### iii. Meetings and Attendance

The Committee met once during the year on 12<sup>th</sup> February, 2016. The detail of attendance of each member is given in the aforementioned table.

## 6.9 Board Level Risk Management Committee

### i. Terms of Reference

In line with erstwhile Listing Agreement (now Listing Regulations), the Board of Directors on 14<sup>th</sup> November, 2014 constituted the Board Level Risk Management Committee. The Committee is also in compliance with the Listing Regulations. The terms of reference of the Committee are as under:

- (i) To review the company's risk governance structure, risk assessment and risk management frame work, guidelines, policies and processes for risk assessment and risk management.
- (ii) To review the company's risk mitigation strategies relating to identified key risks as well as the processes for monitoring and mitigating such risks.
- (iii) Report to the Board on the Committee's activities for information and recommend proposed changes, if any, to the Board for approval.

### ii. Composition of Committee, name of Members & Chairperson

The Board Level Risk Management Committee was last reconstituted on 12<sup>th</sup> January, 2016. The Committee comprises of the following members:

Name of the Director S/ shri	Position	No. of Meetings held during their tenure	No. of Meetings Attended
AS & FA, DIPP (Part-time Official Director)	Chairperson	1	1
Keshav N. Desiraju (Part-time Non-official Director)	Member (w.e.f. 12.01.2016)	-	-
Director (Finance)	Member	1	1
Director (Power)	Member	1	1
Director (IS&P)	Member	1	1
Chairman, Risk Management Steering Committee	Member	1	1
Chief Risk Officer	Member & Convener	1	1

### iii. Meetings and Attendance

The Committee met once during the year on 27<sup>th</sup> October, 2015. The detail of attendance of each member is given in the aforementioned table.

## 6.10 Committee on Arbitration & Major Legal Disputes

### i. Terms of Reference

The Board of Directors in its meeting held on 26<sup>th</sup> May, 2015 constituted the Committee on Arbitration & Major Legal Disputes for detailed review of arbitration cases as well as major legal disputes and thereafter apprising the Board accordingly.

### ii. Composition of Committee, name of Members & Chairperson

The Committee comprises of the following members:

Name of the Director S/ shri	Position	No. of Meetings held during their tenure	No. of Meetings Attended
Ms. Harinder Hira (Part-time Non-official Director)	Chairperson	4	4
Govt. Director- JS/ DHI (Part-time Official Director)	Member	4	3
Director (HR)	Member	4	4

Head-Law is convenor of the Committee and furnishes the required information for review by the Committee.

### iii. Meetings and Attendance

The Committee met four times during the year on 23<sup>rd</sup> July, 2015, 6<sup>th</sup> August, 2015, 5<sup>th</sup> November, 2015 and 11<sup>th</sup> February, 2016. The detail of attendance of each member is given in the aforementioned table.

## 6.11 General Meetings

### i. Location and time of last three AGMs:

Year	Location	Date	Time
<b>FY 2012- 13 (49<sup>th</sup> AGM)</b>	FICCI Auditorium, Barakhamba Road (Tansen Marg) New Delhi-110001	20 <sup>th</sup> September, 2013	10.00 a.m.
<b>FY 2013- 14 (50<sup>th</sup> AGM)</b>	FICCI Auditorium, Barakhamba Road (Tansen Marg) New Delhi-110001	19 <sup>th</sup> September, 2014	10.00 a.m.

Year	Location	Date	Time
FY 2014- 15 (51 <sup>st</sup> AGM)	FICCI Auditorium, Barakhamba Road (Tansen Marg) New Delhi-110001	22 <sup>nd</sup> September, 2015	10.00 a.m.

## ii. Details of Special resolutions passed in previous three AGMs

In line with SEBI circular No. CIR/CFD/POLICY CELL/2/2014 dated 17<sup>th</sup> April, 2014, a Special Resolution was passed in the 51<sup>st</sup> Annual General Meeting held on 22<sup>nd</sup> September, 2015, for approval of prior material related party transaction with Raichur Power Corporation Limited, a Joint Venture between BHEL and Karnataka Power Corporation Limited, for order of main plant equipment supply & services for the 2x800 MW Yeramarus Power Project at a value of ₹ 6300 Crore.

## iii. Postal Ballot

No special resolutions were passed through postal ballot in the previous year. No such resolution is proposed to be conducted through postal ballot.

## 6.12 Disclosures

### i. Disclosures on materially significant related party transactions that may have potential conflict with the interests of the company at large

The company has not entered into any materially significant related party transactions (RPTs) that may have potential conflict with the interests of the company at large.

### ii. Non-compliances/ penalties & strictures imposed on the company related to capital markets during the last three years

No such non-compliance has occurred nor any penalty or stricture been imposed on the company in the last three years. The company has set the highest standards with respect to observance and conformity with laws and all compliances are made before the deadlines, stipulated by statute.

### iii. Whistle Blower Policy

In pursuance of the DPE Guidelines on Corporate Governance for Central Public Sector Enterprises and Clause 49 of the Listing Agreement between listed Companies & the Stock Exchanges and Section 177 of the Companies Act, 2013, a Whistle Blower Policy for BHEL has been approved by

the Board of Directors in its 464<sup>th</sup> meeting held on 12.8.2014.

Accordingly, the detailed Whistle Blower Policy of the company was formulated and was issued by Corporate HR specifying the Competent Authorities in this regard. A copy of the Whistle Blower Policy has also been placed on the website of the company '[www.bhel.com](http://www.bhel.com)'.

The complaints received under the Policy are being processed as per the guidelines in this regard.

Further, no personnel have been denied access to the Audit Committee.

### iv. Details of compliance with the requirements of DPE Guidelines on Corporate Governance, compliance with mandatory requirements and adoption of the non-mandatory Corporate Governance requirements of Listing Agreement / Regulations

All mandatory requirements of the DPE Guidelines on Corporate Governance for CPSEs, erstwhile Listing Agreement & current Listing Regulations have been duly complied with by the company except those relating to required number of Independent Directors on the Board. With regard to non-mandatory requirements under Listing Regulations, BHEL is already in the regime of financial statements with unmodified audit opinion.

No expenditure has been debited in books of accounts which is not for the purpose of business and no expenses incurred and accounted which are personal in nature and incurred for the Board of Directors and Top Management.

### v. Presidential Directives

No Presidential Directive was received during the last three years i.e. 2013-14, 2014-15 & 2015-16.

### vi. Risk Management

In pursuance with SEBI (Listing Obligations and Disclosure Requirements) Regulation, 2015 and DPE Guidelines on Corporate Governance for CPSEs, BHEL has in place a Board approved Risk Management Charter & Policy (RMCP), laying down procedures to inform Board members about the Risk Assessment and Minimization. The RMCP provides overall framework for



Risk Management across the company. The Risk Management process includes Risk Identification, Risk Assessment, Risk Evaluation, Risk Mitigation and regular review & monitoring of Risks.

BHEL has in place a 'Board level Risk Management Committee' (BLRMC) with assigned responsibility of reviewing the company's Risk Governance structure, Risk Assessment & Risk Management framework, guidelines, policies and processes. Besides this, Risk Management Steering Committee (RMSC), having Executive Directors/ Functional Heads from Corporate Functions and Business Sectors as members is responsible for adopting & implementing the risk management framework and leading the risk management initiative across the company. Chief Risk Officer is the convener of Risk Management Steering Committee and responsible for reporting to Board/ Board level Risk Management Committee.

In addition, 35 Risk Management Committees (RMC) have been formed at the Business Sectors/ Regions/ Manufacturing Units/ Corporate Functions level. RMCs are responsible for review of risk profiles & risk mitigation plans and their implementation at the respective Units/Regions.

**vii. Auditor's certificate on Corporate Governance**

Auditor's certificate on Corporate Governance is enclosed.

### 6.13 Communication of Financial and Other Information

As required under the Listing Regulations, the company issues a notice in advance to the Stock Exchanges of the Board Meetings in which the unaudited/ audited financial results are due for consideration within the statutory time period. Further, the said results are intimated immediately after they are taken on record/ approved to the Stock Exchanges. These financial results are published within 48 hours of conclusion of the Board or Committee meeting at which the financial results were approved in at least one English daily newspaper circulating in the whole or substantially the whole of India and in one daily newspaper published in the language of the region, where the registered office of the company is situated and also uploaded on the company's website (www.bhel.com).

Other information pertaining to shareholders viz. details of unpaid dividend, Annual Reports etc., are also displayed on the company's website. Official news releases including important events like receipt of major orders, major project commissioning are posted on the website of the company and simultaneously sent to the Stock Exchanges. Schedule of analyst or institutional investor meet and presentations made by the company to analysts or institutional investors are also uploaded on the website of the company.

In compliance with Listing Regulations, the company disseminates on its website information as required under Regulation 46 which inter alia contains, details regarding terms & conditions of appointment of Independent Directors, composition of various committees of Board of Directors, code of conduct, policy dealing with RPTs, contact information of the designated officials of the company responsible for assisting and handling investor grievances etc.

### 6.14 General Shareholder Information

**i. AGM**

Date	Time	Venue
22 <sup>nd</sup> September, 2016	10.00 AM	Manekshaw Centre Parade Road, (Khyber Lines), New Delhi-110 010

**ii. Financial year**

: 1<sup>st</sup> April, 2015 to 31<sup>st</sup> March, 2016

**iii. Dates of Book Closure**

: 16<sup>th</sup> September 2016 to 22<sup>nd</sup> September 2016 (Both days inclusive)

**iv. Dividend payment date**

: On or before 21<sup>st</sup> October, 2016

#### v. Dividend History:

BHEL has been paying dividend consistently since 1976-77. The details of dividend paid by BHEL are summarized as under:

Year	Rate of Dividend	Total Amount of Dividend Paid (₹ in Crore)	Date on which Dividend was Declared
2007-2008 (Final)	62.50%	305.95	17.09.2008
2008-2009 (Interim)	90%	440.57	29.01.2009*
2008-2009 (Final)	80%	391.62	17.09.2009
2009-2010 (Interim)	110%	538.47	21.01.2010*
2009-2010 (Final)	123%	602.11	17.09.2010
2010-2011 (Interim)	132.50%	648.62	15.03.2011*
2010-2011 (Final)	179%	876.24	20.09.2011
2011-2012 (Interim)	136%	665.75	02.03.2012*
2011-2012 (Final)	184%	900.72	19.09.2012
2012-2013 (Interim)	106%	518.89	01.02.2013*
2012-2013 (Final)	164.50%	805.26	20.09.2013
2013-2014 (Interim)	65.50%	320.64	05.02.2014*
2013-2014 (Final)	76%	372.04	19.09.2014
2014-2015 (Interim)	27%	132.17	12.02.2015*
2014-2015 (Final)	31%	151.75	22.09.2015

\* Date of meeting of Board of Directors in which interim dividend was declared.

- Number of shares of BHEL were 48.952 crore of ₹ 10/- each, which are 244.76 crore shares of ₹ 2/- each post-split w.e.f. 04.10.2011.
- Unclaimed dividend for the year 2007-08 (Final) and 2008-09 (Interim) was already transferred to Investor Education & Protection Fund (IEPF) during the year 2015-16. Further, unclaimed dividend for the year 2008-09 (Final) and 2009-10 (Interim) are proposed to be transferred to IEPF on 23.10.2016 and on 22.02.2017 respectively.

In case a shareholder has not been able to receive dividend for any of the last seven years and the same has not yet been transferred to the Investor Education & Protection Fund (IEPF), he /she can claim this unpaid dividend by following the procedure uploaded on the company's website ([www.bhel.com](http://www.bhel.com)).

#### vi (a) Listing on Stock Exchanges and Stock Code

BHEL's shares are listed on the following Stock Exchanges for which listing fees for 2015-16 has been paid:

Name of the Stock Exchange	Stock Code
1. Bombay Stock Exchange Limited Phiroze Jeejeebhoy Towers, Dalal Street, Mumbai - 400 001	500103
2. National Stock Exchange of India Limited Exchange Plaza, Plot no. C/1, Block - G, Bandra Kurla Complex, Bandra (East), Mumbai - 400 051	BHEL

**b) Payment of Annual Custodian Fee to Depositories**

The Annual Custodian fee has been paid to NSDL and CDSL for the financial year 2015-16.

**vii. Delisting of Equity Shares**

BHEL filed necessary application with Calcutta Stock Exchange Association Limited (CSE) for delisting. Final approval from CSE is still awaited, however, "BHEL" Scrips has not been appearing in the list of securities listed on the CSE.

**viii. The High, Low, Close & Volume of BHEL shares and market index during each month in the financial year 2015-16 at BSE & NSE are indicated below:**

Market Price Data: High, Low, Close during each month in the financial year 2015-16										
Months	BSE				NSE				Market Index (Close)	
	High (in ₹)	Low (in ₹)	Close (in ₹)	Volume (No. of shares)	High (in ₹)	Low (in ₹)	Close (in ₹)	Volume (No. of shares)	SENSEX	NIFTY
<b>Apr-15</b>	243.90	223.05	237.20	8248140	244.45	222.55	238.05	61397293	27011.31	8181.50
<b>May-15</b>	255.20	221.60	251.60	6802984	258.00	221.55	251.65	67193857	27828.44	8433.65
<b>Jun-15</b>	259.85	238.35	247.85	19565268	259.95	238.15	247.90	64004675	27780.83	8368.50
<b>Jul-15</b>	289.85	247.50	278.70	6916461	290.00	247.30	278.35	69745912	28114.56	8532.85
<b>Aug-15</b>	287.90	214.70	226.50	9962485	287.95	214.35	226.45	94162313	26283.09	7971.30
<b>Sep-15</b>	227.90	192.10	205.55	13337596	227.90	192.00	205.55	83125904	26154.83	7948.90
<b>Oct-15</b>	219.70	197.15	198.85	10347203	219.70	197.00	198.85	84900726	26656.83	8065.80
<b>Nov-15</b>	203.30	173.00	175.45	8743098	203.20	172.80	175.05	70058136	26145.67	7935.25
<b>Dec-15</b>	177.00	164.10	169.25	7769930	176.95	164.15	169.15	63725148	26117.54	7946.35
<b>Jan-16</b>	175.00	131.90	138.85	13658851	172.00	131.80	138.70	75046442	24870.69	7563.55
<b>Feb-16</b>	144.75	90.40	91.10	25335902	144.80	90.15	90.85	172053511	23002.00	6987.05
<b>Mar-16</b>	117.80	90.85	113.75	24127361	117.80	90.75	113.85	178459805	25341.86	7738.40

Source: [www.bseindia.com](http://www.bseindia.com) / [www.nseindia.com](http://www.nseindia.com)

**ix. Policy on Insider Trading**

BHEL endeavors to preserve the confidentiality of unpublished price sensitive information and to prevent misuse of such information. For this purpose and in line with the SEBI (Prohibition of Insider Trading) Regulations, 1992, the company had adopted "Code of Conduct for Prevention of Insider Trading" on 26<sup>th</sup> August, 2002 which was subsequently revised w.e.f. 29<sup>th</sup> January, 2009.

SEBI vide notification dated 15.01.2015, introduced the SEBI (Prohibition of Insider Trading) Regulations, 2015, applicable w.e.f. 15<sup>th</sup> May, 2015. In line with SEBI (Prohibition of Insider Trading) Regulations, 2015, the Board, in its, 469<sup>th</sup> meeting held on 6<sup>th</sup> April, 2015, approved the 'Code of Conduct for Regulating & Reporting Trading by Insiders and for Fair Disclosure, 2015'. The objective of the Code is to regulate, monitor and report trading by Designated Employees and other Connected Persons towards achieving compliance with SEBI (Prohibition of Insider Trading) Regulations, 2015. The Code also provides for practices and procedures for fair disclosure of unpublished price sensitive information. Head – Corporate Strategic Management is the Chief Investor Relations Officer (CIRO) of the company under this code.



**x. Registrar & Share Transfer Agent (RTA)**

**M/s Karvy Computershare Private Ltd.**

Delhi Address	Hyderabad Address
<b>UNIT: BHEL</b> 105-108, Arunachal Building, 19, Barakhamba Road, <u>New Delhi – 110 001</u>  Tel. : 011-23324401 43681700/01/02/21 Fax: 011-23730743 Email:ksbldelhi@karvy.com	<b>UNIT: BHEL</b> Karvy Selenium Tower B, Plot 31-32, Gachibowli, Financial District, <u>Nanakramguda, Hyderabad – 500 032</u>  Tel.: 040-67162222 Fax : 040-23001153 Email: madhusudhan.ms@karvy.com einward.ris@karvy.com Website: www.karvycomputershare.com

RTA's performance in servicing shareholders has been satisfactory. All the investor grievances have been promptly attended to.

**xi. Share Transfer System**

The share transfer system with respect to physical shares consists of activities like receipt of shares along with transfer deed from transferees, its verification, approval and dispatch of duly endorsed share certificates to the respective transferees within the prescribed time as per the Listing Agreement/ Listing Regulations. In line with Listing Agreement/ Listing Regulations, share certificates are being issued within the timeline prescribed for transfer, sub-division and consolidation. All share transfer activities under physical segment like receipt/dispatch of documents and their verification are being carried out by M/s. Karvy Computershare Private Limited.

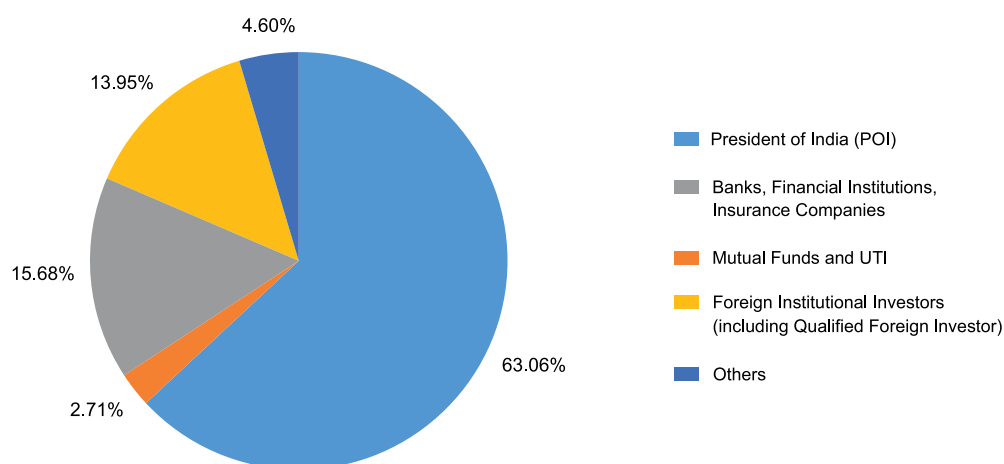
**xii. Distribution of Shareholding**

**(i) Distribution of shares according to size of holding as on 31<sup>st</sup> March 2016**

No. of equity share(s) held	No. of Shareholders	% of Shareholders	No. of Shares	% of Shareholding
1 - 500	374384	92.52%	37318256	1.52%
501 - 1000	17591	4.35%	13933623	0.57%
1001 - 2000	7392	1.83%	11274257	0.46%
2001 - 3000	1977	0.49%	5033616	0.21%
3001 - 4000	793	0.19%	2841898	0.12%
4001 - 5000	591	0.15%	2809972	0.11%
5001 - 10000	886	0.22%	6506388	0.27%
10001 and above	1015	0.25%	2367881990	96.74%
<b>Total</b>	<b>404629</b>	<b>100.00%</b>	<b>2447600000</b>	<b>100.00%</b>

(ii) Shareholding Pattern as on 31<sup>st</sup> March 2016

Category	2016		2015	
	Voting strength (%)	No. of shares held	Voting strength (%)	No. of shares held
<b>Promoters Holding</b>				
Indian Promoters-				
President of India (POI)	63.06	1543452000	63.06	1543452000
<b>Total Promoter holding</b>	<b>63.06</b>	<b>1543452000</b>	<b>63.06</b>	<b>1543452000</b>
<b>Non-promoters Holding</b>				
Mutual Funds and UTI	2.71	66356008	1.63	39809147
Banks, Financial Institutions, Insurance Companies	15.68	384009517	15.68	383843326
Foreign Institutional Investors (including Qualified Foreign Investor)	13.95	341291372	16.07	393190119
<b>Others</b>				
Directors & Relatives	0.00	1500	0.00	4100
Bodies Corporate	0.98	24025478	0.99	24218590
Individuals	3.19	77944110	2.26	55323057
Foreign Nationals	0.00	--	0.00	750
NRIs	0.20	4886565	0.16	3937931
Trust	0.13	3097094	0.08	2017962
Clearing Members	0.10	2536356	0.07	1803018
<b>Total Non-promoter holding</b>	<b>36.94</b>	<b>904148000</b>	<b>36.94</b>	<b>904148000</b>
<b>Grand Total</b>	<b>100.00</b>	<b>2447600000</b>	<b>100.00</b>	<b>2447600000</b>



**(iii) List of shareholders who are holding more than 1% of the shares of the company as on 31<sup>st</sup> March 2016**

Category & Shareholder's Name	2016	
	Voting strength (%)	No. of shares held
<b>Promoters</b>		
President of India (POI)	63.06	1,543,452,000
<b>Non-promoters</b>		
1. Life Insurance Corporation of India	9.42	230453920
2. Comgest Growth PLC A/c Comgest Growth Emerging Market	1.30	31801590
3. Magellan	1.10	26822509
4. LIC of India Market Plus 1 Growth Fund	1.02	24939880

**xiii. Dematerialisation of shares and liquidity**

In accordance with the directions of the Securities & Exchange Board of India (SEBI), trading in BHEL shares by all categories of investors in demat form has been made compulsory w.e.f. 5<sup>th</sup> April, 1999. BHEL has executed agreement with both the depositories of the country i.e. National Securities Depository Limited (NSDL) and Central Depository Services (India) Limited (CDSL) for admission of its securities under demat mode. As on 31<sup>st</sup> March, 2016, 99.94% of the total equity share capital of BHEL is being held in demat mode by the shareholders. Shareholding of Hon'ble President of India (being the Promoter of the company holding 63.06% of the paid-up share capital of the company) is also held in dematerialized form. The International Securities Identification Number (ISIN) allotted to the company is INE257A01026.

Shares held by depositories as on 31<sup>st</sup> March 2016

- NSDL- 98.88%
- CDSL- 1.06%
- Physical- 0.06%

**xiv. Outstanding GDRs /ADRs / Warrants or any convertible instruments, conversion date and likely impact on equity:**

Nil

**xv. Foreign Exchange risk or Commodity price risk and hedging activities**

Hedging activities/transactions during the financial year 2015-16 have been undertaken by the company in line with the Board approved Foreign Exchange Risk Management Policy. Major industrial commodities like Steel, Copper, Aluminum, CRGO, CRNGO, Transformer Oil, Lubricants are being procured centrally by one of the identified units by bulking the requirements of various BHEL units, to the extent possible, to derive price advantage. To insulate the company against price fluctuations, Framework Agreements are being entered into on annual/half yearly/quarterly basis. Price trends are monitored regularly by Corp. MM and the units are sensitized.



**xvi. Plant locations**

<b>BHEL Manufacturing Units</b>	Bengaluru	1. Electronics Division (EDN) 2. Electronics Systems Division (ESD) 3. Electro Porcelain Division (EPD)
	Bhopal	4. Heavy Electrical Plant (HEP)
	Goindwal	5. Industrial Valves Plant (IVP)
	Haridwar	6. Heavy Electrical Equipment Plant (HEEP) 7. Central Foundry Forge Plant (CFFP)
	Hyderabad	8. Heavy Power Equipment Plant (HPEP)
	Jagdishpur	9. Insulator Plant (IP) 10. Centralised Stamping Unit (CSU)
	Jhansi	11. Transformer Plant (TP)
	Rudrapur	12. Component Fabrication Plant (CFP)
	Ranipet	13. Boiler Auxiliaries Plant (BAP)
	Tiruchirappalli	14. High Pressure Boiler Plant (HPBP) 15. Seamless Steel Tube Plant (SSTP)
	Thirumayam	16. Power Plant Piping Unit (PPPU)
	Visakhapatnam	17. Heavy Plates & Vessels Plant (HPVP)
<b>BHEL Repair Units</b>	Mumbai	1. Electrical Machine Repair Plant (EMRP)
	Varanasi	2. Heavy Equipment Repair Plant (HERP)
<b>BHEL Subsidiary</b>	Kasaragod	1. BHEL Electrical Machines Ltd. (BHEL-EML)

**xvii. Address for correspondence**

Shareholders can send their queries regarding transfer of shares, non-receipt of dividend, revalidation of dividend warrants and any other correspondence relating to the shares of the company either to:

**KARVY COMPUTERSHARE PVT. LTD.**

**UNIT: BHEL**

**Delhi:** 105-108, Arunachal Building  
19, Barakhamba Road  
New Delhi – 110 001

Phone: 011-23324401  
43681700/01/02/21  
Fax: 011-23730743  
Email: ksblldelhi@karvy.com

**Hyderabad:** Karvy Selenium Tower B,  
Plot 31-32, Gachibowli,  
Financial District, Nanakramguda,  
Hyderabad – 500 032

Phone: 040-67162222  
Fax: 040-23001153  
Email: madhusudhan.ms@karvy.com  
einward.ris@karvy.com

OR

**Shri I.P. Singh**

Company Secretary  
BHEL

Regd. Office: BHEL House, Siri Fort,  
New Delhi – 110 049

Phone: 011-26001046  
Fax: 011-66337533  
Email: shareholderquery@bhel.in

**Note:** Shareholders holding shares in electronic mode should address all correspondence to their respective depository participants.

**Declaration:** Pursuant to Listing Regulations, it is hereby declared that all Board members and Senior Management personnel have affirmed compliance with BHEL's "Code of Business Conduct and Ethics" for the financial year 2015-16.

For and on behalf of the Board of Directors of  
**BHARAT HEAVY ELECTRICALS LTD**



**(Atul Sobti)**

Chairman & Managing Director

**Place : New Delhi**  
**Dated : August 10, 2016**

## Auditors' Certificate on Corporate Governance

The Members

**Bharat Heavy Electricals Ltd.**

We have examined the compliance of conditions of Corporate Governance by Bharat Heavy Electricals Ltd. for the year ended on 31.03.2016 as stipulated in the SEBI (Listing Obligations and Disclosure Requirements) Regulations, 2015 (Listing Regulation) of the said company and the DPE Guidelines on Corporate Governance for Central Public Sector Enterprises (DPE Guidelines).

The compliance of conditions of Corporate Governance is the responsibility of the management. Our examination was limited to procedures and implementation thereof, adopted by the company for ensuring the compliance of the conditions of the Corporate Governance. It is neither an audit nor an expression of the opinion on the financial statements of the company.

In our opinion and to the best of our information and according to the explanations given to us, we certify that as on 31.03.2016, the company has complied with all the conditions of Corporate Governance as stipulated in the above mentioned Listing Regulations and DPE Guidelines *except Regulation 17 (1) (b) of Listing Regulations (Clause 3.1.4 of the DPE Guidelines) relating to condition of at least half of the Board to comprise of independent directors.*

We further state that such compliance is neither an assurance as to the future viability of the company nor the efficiency or effectiveness with which the management has conducted the affairs of the company.

For and on behalf of  
M/s Wahi & Gupta  
Chartered Accountants  
FRN 002263N



**(Y.K. Gupta)**

Partner  
M. No. 016020

**Place : New Delhi**  
**Dated : June 21, 2016**

## Secretarial Audit Report

**For the Financial Year ended on 31<sup>st</sup> March, 2016**

{Pursuant to Section 204(1) of the Companies Act, 2013 and Rule 9 of the Companies (Appointment and Remuneration of Managerial Personnel) Rules, 2014}

To,  
The Members,  
**Bharat Heavy Electricals Limited.**

I have conducted the Secretarial Audit of the compliance of applicable statutory provisions and the adherence to good corporate practices by **Bharat Heavy Electricals Limited** (hereinafter called 'the Company' or 'BHEL'). Secretarial Audit was conducted in a manner that provided me a reasonable basis for evaluating the corporate conducts/statutory compliances and expressing my opinion thereon.

Based on my verification of the company's books, papers, minute books, forms and returns filed and other records maintained by the company and also the information provided by the Company, its officers, agents and authorized representatives during the conduct of secretarial audit, I hereby report that in my opinion, the company has, during the audit period covering the financial period ended on 31<sup>st</sup> March, 2016 complied with the statutory provisions listed hereunder and also that the Company has proper Board- processes and Compliance-mechanism in place to the extent, in the manner and subject to the reporting made hereinafter:

I have examined the books, papers, minute books, forms and returns filed and other records maintained by the Company for the financial year ended on 31<sup>st</sup> March, 2016 according to the provisions of:

- (i) The Companies Act, 2013 (the Act) and the rules made thereunder;
- (ii) The Securities Contracts (Regulation) Act, 1956 ('SCRA') and the rules made thereunder;
- (iii) The Depositories Act, 1996 and the Regulations and Bye-laws framed thereunder;
- (iv) Foreign Exchange Management Act, 1999 and the rules and regulations made thereunder to the extent of Foreign Direct Investment, Overseas Direct Investment and External Commercial Borrowings;
- (v) The following Regulations and Guidelines prescribed under the Securities and Exchange Board of India Act, 1992 ('SEBI Act'):-

- (a) The Securities and Exchange Board of India (Substantial Acquisition of Shares and Takeovers) Regulation, 2011;
- (b) The Securities and Exchange Board of India (Prohibition of Insider Trading) Regulations, 2015;
- (c) The Securities and Exchange Board of India (Issue of Capital and Disclosure Requirements) Regulations, 2009;
- (d) The Securities and Exchange Board of India (Employee Stock Option Scheme and Employee Stock Purchase Scheme) Guidelines, 1999;
- (e) The Securities and Exchange Board of India (Issue and Listing of Debt Securities) Regulations, 2008;
- (f) The Securities and Exchange Board of India (Registrars to an Issue and Share Transfer Agents) Regulations, 1993 regarding the Companies Act and dealing with client;
- (g) The Securities and Exchange Board of India (Delisting of Equity Shares) Regulations, 2009; and
- (h) The Securities and Exchange Board of India (Buyback of Securities) Regulations, 1998;
- (vi) Compliances/processes/systems under following specific applicable Laws to the Company are being verified on the basis of periodic certificate submitted to the Board of Directors of the Company:-
  - a) Atomic Energy (Radiation Protection) Rules, 2004.
  - b) Batteries (Management and Handling) Rules, 2001.
  - c) Factories Act, 1948.
  - d) The Indian Boilers Act, 1923.

I have also examined compliance with the applicable clauses of the following:

- (i) Secretarial Standards issued by the Institute of Company Secretaries of India-Generally complied with.



- (ii) The Listing Agreements and Securities and Exchange Board of India (Listing Obligations and Disclosure Requirements) Regulations, 2015.

During the period under review the Company has complied with the provisions of the Act, Rules, Regulations, Guidelines, Standards etc. mentioned above subject to the following observation:

- i) *As per Section 149(4) of the Companies Act, 2013, Regulation 17(1) (b) of Securities and Exchange Board of India (Listing Obligations and Disclosure Requirements) Regulations, 2015 (Clause 49 (II) (A) of erstwhile Listing Agreement), Para 3.1.4 of the DPE Guidelines on Corporate Governance, the company did not have the requisite composition of the Board of Directors.*

**I further report** that BHEL is a Government Company under the administrative control of the Department of Heavy Industry, Ministry of Heavy Industries & Public Enterprises, Govt. of India. All the Directors are nominated/ appointed by the Govt. of India. The changes in the composition of the Board of Directors that took place during the period under review were carried out in compliance with the provisions of the Act.

Generally, adequate notice is given to all Directors to schedule the Board Meetings, agenda and detailed notes on agenda were sent at least seven days in advance, and a system exists for seeking and obtaining further information and clarifications on the agenda items before the meeting and for meaningful participation at the meeting.

Majority decisions are carried through while the dissenting member's views are captured and recorded as part of the minutes, wherever required.

**I further report** that as per Section 178(2) of the Companies Act, 2013, the Nomination and Remuneration Committee of the Board was required to carry out evaluation of every director's performance. Further, Regulation 17(10) & 25(4) of SEBI (LODR) 2015 and the Code for Independent Directors pursuant to Section 149 (8) of the Companies Act, 2013 requires the performance evaluation of Independent Directors to decide their continuance or otherwise. Further, the MCA has vide its notification dated 5<sup>th</sup> June, 2015 notified the exemptions to Government Companies from the provisions of the Companies Act, 2013 which inter-alia provides that Sub Sections (2), (3) & (4) of Section 178 regarding appointment, performance evaluation and remuneration shall not apply to Directors of the

*Government Companies. The appointment of Functional Directors, Part Time Official Directors as well as Part Time Non-Official Directors (Independent Directors) on the Board of BHEL is made by Government of India (GOI). Further, terms & conditions of appointment as well as tenure of all directors are also decided by GOI and there is a well laid down procedure for evaluation of Functional Directors and CMD by Administrative Ministry. Upon request and representations as received from CPSEs, the Department of Public Enterprises has also written to Department of Economic Affairs and Securities and Exchange Board of India to align the SEBI (LODR) Regulations, 2015 with the Companies Act, 2013 based on the Exemptions under Companies Act, 2013 as provided to the Government Companies.*

**I further report** that there are adequate systems and processes in the Company commensurate with the size and operations of the Company to monitor and ensure compliance with applicable laws, rules, regulations and guidelines.

**I further report** that during the audit period, there were no specific events/actions having a major bearing on the Company's affairs in pursuance of the above referred laws.

For Agarwal S. & Associates  
Company Secretaries



**Sachin Agarwal**

FCS No.: 5774

C.P. No.: 5910

Place: New Delhi

Date: July 4, 2016

*This report is to be read with our letter of even date which is annexed as "Annexure A" and forms an integral part of this report.*

**"Annexure A"**

To,

The Members,

**Bharat Heavy Electricals Limited**

Our report of even date is to be read along with this letter.

1. Maintenance of secretarial record is the responsibility of the management of the Company. Our Responsibility is to express an opinion on these secretarial records based on our audit.
2. We have followed the audit practices and processes as were appropriate to obtain reasonable assurance about the correctness of the contents of the secretarial records. The verification was done on test basis to ensure that correct facts are reflected in secretarial records. We believe that the processes and practices, we followed provide a reasonable basis for our opinion.
3. We have not verified the correctness and appropriateness of financial records and Books of Accounts of the Company.
4. Where ever required, we have obtained the Management representation about the compliance of laws, rules and regulation and happening of events etc.
5. The Compliance of the provisions of corporate and other applicable laws, rules, regulations, standards are the responsibility of management. Our examination was limited to the verification of procedures on test basis.
6. The Secretarial Audit Report is neither an assurance as to future viability of the Company nor of the efficacy or effectiveness with which the management has conducted the affairs of the Company.

For Agarwal S. & Associates  
Company Secretaries



**Sachin Agarwal**

FCS No.: 5774

C.P. No.: 5910

Place: New Delhi

Date: July 4, 2016

## Secretarial Audit Report for the FY 2015-16

Observation	Reply
<p>As per Section 149(4) of the Companies Act, 2013, Regulation 17(1) (b) of Securities and Exchange Board of India (Listing Obligations and Disclosure Requirements) Regulations, 2015 (Clause 49 (II) (A) of erstwhile Listing Agreement), Para 3.1.4 of the DPE Guidelines on Corporate Governance, the company did not have the requisite composition of the Board of Directors.</p>	<p>BHEL, being Government Company, the Independent Directors are selected by the Administrative Ministry viz., Department of Heavy Industry in consultation with the Search Committee of the Department of Public Enterprises. The company is in constant communication with the Department of Heavy Industry for the appointment of requisite number of Independent Directors on its Board in order to comply with the provisions of the Companies Act, 2013, Listing Regulations and DPE Guidelines.</p>

## Extracts of Annual Return

### Form No. MGT-9

#### EXTRACT OF ANNUAL RETURN

as on the financial year ended on 31.03.2016

[Pursuant to section 92(3) of the Companies Act, 2013 and rule 12(1) of the Companies (Management and Administration) Rules, 2014]

### I. REGISTRATION AND OTHER DETAILS

i) CIN	:	L74899DL1964GOI004281
ii) Registration Date	:	13 <sup>th</sup> November, 1964
iii) Name of the Company	:	Bharat Heavy Electricals Limited
iv) Category/ Sub-Category of the Company	:	Public Company/ Government Company/ Limited by shares
v) Address of the Registered office and contact details	:	BHEL House, Siri Fort, New Delhi- 110049 Tel: 011-66337000 Fax: 011-26493021 Email: shareholderquery@bhel.in
vi) Whether listed company (Yes / No)	:	Yes
vii) Name, Address and Contact details of Registrar and Transfer Agent, if any	:	<b>Karvy Computershare Private Limited</b> Karvy Selenium Tower B, Plot 31-32, Gachibowli, Financial District, Nanakramguda, Hyderabad-500032 Tel.: 040-67162222 Fax : 040-23001153 Email: madhusudhan.ms@karvy.com; einward.ris@karvy.com

### II. PRINCIPAL BUSINESS ACTIVITIES OF THE COMPANY

All the business activities contributing 10% or more of the total turnover of the company shall be stated:-

Sl. No.	Name and Description of main products/ services	NIC Code of the Product/service	% to total turnover of the company
1.	Boiler	2513	27.79
2.	Turbine & Generator	2811	17.07
3	Construction & Service	42201	20.67

### III. PARTICULARS OF HOLDING, SUBSIDIARY AND ASSOCIATE COMPANIES

Sl. No.	Name and address of the company	CIN/GLN	Holding/ Subsidiary/ Associate	% of shares held	Applicable Section
1.	<b>BHEL Electrical Machines Ltd.</b> 283/1&2, Village Puttur, Post Bedradka, Kasargod, Kerala- 671124	U31909KL2011GOI027440	Subsidiary	51%	2(87) of Companies Act, 2013



2.	<b>Raichur Power Corporation Ltd.</b> # 22/23, Sudarshan Complex, Sheshadari Road, Bengaluru- 560009	U40101KA2009PLC049582	Associate	27.34%	2(6) of Companies Act, 2013
3.	<b>Dada Dhuniwale Khandwa Power Ltd.</b> Shed No. 7, MPSEB Complex, Rampur, Jabalpur- 482008	U40100MP2010PLC023131	Associate	50%	2(6) of Companies Act, 2013
4.	<b>BHEL-GE Gas Turbine Services Pvt. Ltd.</b> Gumidelli Towers, 6 <sup>th</sup> Floor, 1-10-39 to 44, Begumpet Airport Road, Begumpet, Hyderabad- 500016	U51505TG1997PTC040657	Associate	50% less one share	2(6) of Companies Act, 2013
5.	<b>NTPC BHEL Power Projects Pvt. Ltd.</b> NTPC Bhawan, SCOPE Complex, 7 Institutional Area, Lodhi Road, New Delhi- 110003	U40102DL2008PTC177307	Associate	50%	2(6) of Companies Act, 2013
6.	<b>Powerplant Performance Improvement Ltd.</b> 54/ D-9, Kishangarh Village, Vasant Kunj, New Delhi- 110070	U28991DL2003PLC120915	Associate	50% less one share	2(6) of Companies Act, 2013
7.	<b>Latur Power Company Ltd.</b> Prakashgad, 2 <sup>nd</sup> Floor, Plot No. G-9, Anant Kanekar Marg, Bandra (E), Mumbai- 400051	U40102MH2011PLC215884	Associate	50% (JV under liquidation)	2(6) of Companies Act, 2013

#### IV. SHAREHOLDING PATTERN (Equity Share Capital Breakup as percentage of Total Equity)

##### i) Category-wise Share Holding

Category of Shareholders	No. of Shares held at the beginning of the year (as on 01.04.2015)				No. of Shares held at the end of the year (as on 31.03.2016)				% Change during the year
	Demat	Physical	Total	% of Total Shares	Demat	Physical	Total	% of Total Shares	
A. Promoters									
(1) Indian									
a) Individual/ HUF	0	0	0	0.00	0	0	0	0.00	0.00
b) Central Govt.	1543452000	0	1543452000	63.06	1543452000	0	1543452000	63.06	0.00
c) State Govt. (s)	0	0	0	0.00	0	0	0	0.00	0.00
d) Bodies Corp.	0	0	0	0.00	0	0	0	0.00	0.00
e) Banks / FI	0	0	0	0.00	0	0	0	0.00	0.00
f) Any Other....	0	0	0	0.00	0	0	0	0.00	0.00
Sub-total (A) (1):-	1543452000	0	1543452000	63.06	1543452000	0	1543452000	63.06	0.00

Category of Shareholders	No. of Shares held at the beginning of the year (as on 01.04.2015)				No. of Shares held at the end of the year (as on 31.03.2016)				% Change during the year
	Demat	Physical	Total	% of Total Shares	Demat	Physical	Total	% of Total Shares	
<b>(2) Foreign</b>									
a) NRIs - Individuals	0	0	0	0.00	0	0	0	0.00	0.00
b) Other – Individuals	0	0	0	0.00	0	0	0	0.00	0.00
c) Bodies Corp.	0	0	0	0.00	0	0	0	0.00	0.00
d) Banks / FI	0	0	0	0.00	0	0	0	0.00	0.00
e) Any Other....	0	0	0	0.00	0	0	0	0.00	0.00
<b>Sub-total (A) (2):-</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.00</b>	<b>0.00</b>
<b>Total shareholding of Promoter (A) = (A)(1)+(A)(2)</b>	<b>1543452000</b>	<b>0</b>	<b>1543452000</b>	<b>63.06</b>	<b>1543452000</b>	<b>0</b>	<b>1543452000</b>	<b>63.06</b>	<b>0.00</b>
<b>B. Public Shareholding</b>									
<b>(1) Institutions</b>									
a) Mutual Funds	39793147	16000	39809147	1.63	66340008	16000	66356008	2.71	1.08
b) Banks / FI	126603246	4000	126607246	5.17	128612301	4000	128616301	5.25	0.08
c) Central Govt.	0	0	0	0.00	0	0	0	0.00	0.00
d) State Govt(s)	0	0	0	0.00	0	0	0	0.00	0.00
e) Venture Capital Funds	0	0	0	0.00	0	0	0	0.00	0.00
f) Insurance Companies	257234080	2000	257236080	10.51	255391216	2000	255393216	10.43	-0.08
g) FIs	393181119	9000	393190119	16.06	341282372	9000	341291372	13.94	-2.12
h) Foreign Venture Capital Funds	0	0	0	0.00	0	0	0	0.00	0.00
i) Others (specify)									
Qualified Foreign Investor	0	0	0	0.00	0	0	0	0.00	0.00
<b>Sub-total (B)(1):-</b>	<b>816811592</b>	<b>31000</b>	<b>816842592</b>	<b>33.37</b>	<b>791625897</b>	<b>31000</b>	<b>791656897</b>	<b>32.34</b>	<b>-1.03</b>
<b>(2) Non-Institutions</b>									
a) Bodies Corp.									
i) Indian	24212590	6000	24218590	0.99	24000312	6000	24006312	0.98	-0.01
ii) Overseas	0	0	0	0.00	0	0	0	0.00	0.00
b) Individuals									
i) Individual shareholders holding nominal share capital up to ₹ 1 lakh	53528596	1356741	54885337	2.24	75493102	1314053	76807155	3.14	0.90

Category of Shareholders	No. of Shares held at the beginning of the year (as on 01.04.2015)				No. of Shares held at the end of the year (as on 31.03.2016)				% Change during the year
	Demat	Physical	Total	% of Total Shares	Demat	Physical	Total	% of Total Shares	
ii) Individual shareholders holding nominal share capital in excess of ₹ 1 lakh	437720	0	437720	0.02	1136955	0	1136955	0.05	0.03
c) Others (specify)									
Clearing Members	1803018	0	1803018	0.07	2536356	0	2536356	0.10	0.03
Directors	4100	0	4100	0.00	1500	0	1500	0.00	0.00
Foreign Nationals	750	0	750	0.00	0	0	0	0.00	0.00
NBFC	0	0	0	0.00	19166	0	19166	0.00	0.00
Non Resident Indians	3925431	12500	3937931	0.16	4874065	12500	4886565	0.20	0.04
Trusts	2017962	0	2017962	0.08	3097094	0	3097094	0.13	0.04
<b>Sub-total (B)(2):-</b>	<b>85930167</b>	<b>1375241</b>	<b>87305408</b>	<b>3.57</b>	<b>111158550</b>	<b>1332553</b>	<b>112491103</b>	<b>4.60</b>	<b>1.03</b>
<b>Total Public Shareholding (B)=(B)(1)+(B)(2)</b>	<b>902741759</b>	<b>1406241</b>	<b>904148000</b>	<b>36.94</b>	<b>902784447</b>	<b>1363553</b>	<b>904148000</b>	<b>36.94</b>	<b>0.00</b>
<b>C. Shares held by Custodian for GDRs &amp; ADRs</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.00</b>	<b>0.00</b>
<b>Grand Total (A+B+C)</b>	<b>2446193759</b>	<b>1406241</b>	<b>2447600000</b>	<b>100.00</b>	<b>2446236447</b>	<b>1363553</b>	<b>2447600000</b>	<b>100.00</b>	<b>0.00</b>

**(ii) Shareholding of Promoters**

Sl. No.	Shareholder's Name	Shareholding at the beginning of the year (as on 01.04.2015)			Shareholding at the end of the Year (as on 31.03.2016)			% change in share holding during the year
		No. of Shares	% of total Shares of the Company	% of Shares Pledged / encumbered to total shares	No. of Shares	% of total Shares of the Company	% of Shares Pledged / encumbered to total shares	
1	President of India	1543452000	63.06	0.00	1543452000	63.06	0.00	0.00
	<b>TOTAL</b>	<b>1543452000</b>	<b>63.06</b>	<b>0.00</b>	<b>1543452000</b>	<b>63.06</b>	<b>0.00</b>	<b>0.00</b>

**(iii) Change in Promoters' Shareholding (No Change)**

Sl. No.	Name	Shareholding at the beginning of the year (01.04.2015)/ end of the year (31.03.2016)		Date wise Increase/ Decrease in Promoters Shareholding during the year specifying the reasons for Increase/ Decrease			Cumulative Shareholding during the year (01.04.2014 to 31.03.2015)	
		No. of shares	% of total shares of the Company	Date	Increase/ Decrease in Share holding	Reason	No. of shares	% of total shares of the Company
1.	President of India	1543452000	63.06	NO CHANGE			1543452000	63.06

**(iv) Shareholding Pattern of top ten Shareholders (other than Directors, Promoters and Holders of GDRs and ADRs)**

Sl. No.	Name	Shareholding at the beginning of the year (01.04.2015)/ end of the year (31.03.2016)		Date wise Increase/ Decrease in Shareholding during the year specifying the reasons for Increase/ Decrease			Cumulative Shareholding during the year (01.04.2015 to 31.03.2016)	
		No. of shares	% of total shares of the Company	Date	Increase/ Decrease in Share holding	Reason	No. of shares	% of total shares of the Company
1	Life Insurance Corporation of India	230516784	9.42					
				14.08.2015	-62864	Sale	230453920	9.42
		230453920	9.42	31.03.2016			230453920	9.42
2	Comgest Growth PLC A/c Comgest Growth Emerging Markets	28801590	1.18					
				30.10.2015	3000000	Purchase	31801590	1.30
		31801590	1.30	31.03.2016			31801590	1.30
3	Lazard Asset Management LLC A/c Lazard Emerging Markets Portfolio	28408477	1.16					
				01.05.2015	1103354	Purchase	29511831	1.21
				28.08.2015	-454871	Sale	29056960	1.19
				18.09.2015	-632496	Sale	28424464	1.16
				25.09.2015	-1985753	Sale	26438711	1.08
				30.09.2015	-202487	Sale	26236224	1.07
				06.11.2015	-684965	Sale	25551259	1.04
				04.12.2015	-736872	Sale	24814387	1.01
				25.12.2015	-682398	Sale	24131989	0.99
				31.12.2015	-401055	Sale	23730934	0.97
		23730934	0.97	31.03.2016			23730934	0.97
4	Magellan	26802105	1.10					
				17.04.2015	-567382	Sale	26234723	1.07
				24.07.2015	-1027595	Sale	25207128	1.03
				30.10.2015	1615381	Purchase	26822509	1.10
		26822509	1.10	31.03.2016			26822509	1.10
5	LIC of India Market Plus 1 Growth Fund	24939880	1.02		No Change			
		24939880	1.02	31.03.2016			24939880	1.02
6	LIC of India Money Plus Growth Fund	22406815	0.92		No Change			
		22406815	0.92	31.03.2016			22406815	0.92



Sl. No.	Name	Shareholding at the beginning of the year (01.04.2015)/ end of the year (31.03.2016)		Date wise Increase/ Decrease in Shareholding during the year specifying the reasons for Increase/ Decrease			Cumulative Shareholding during the year (01.04.2015 to 31.03.2016)	
		No. of shares	% of total shares of the Company	Date	Increase/ Decrease in Share holding	Reason	No. of shares	% of total shares of the Company
7	Fidelity Puritan Trust-Fidelity Low-Priced Stock Fund	22000000	0.90					
				10.07.2015	-500000	Sale	21500000	0.88
				17.07.2015	-500000	Sale	21000000	0.86
		21000000	0.86	31.03.2016			21000000	0.86
8	Life Insurance Corporation of India P& GS Fund	18902990	0.77		No Change			
		18902990	0.77	31.03.2016			18902990	0.77
9	LIC of India Market Plus Growth Fund	18387175	0.75		No Change			
		18387175	0.75	31.03.2016			18387175	0.75
10	LIC of India Profit Plus Growth Fund	17381255	0.71		No Change			
		17381255	0.71	31.03.2016			17381255	0.71

**(v) Shareholding of Directors and Key Managerial Personnel**

Sl. No.	Name (S/ shri)	Shareholding at the beginning of the year (01.04.2015)/ end of the year (31.03.2016)		Date wise Increase/ Decrease in Shareholding during the year specifying the reasons for Increase/ Decrease			Cumulative Shareholding during the year (01.04.2015 to 31.03.2016/ till cessation)	
		No. of shares	% of total shares of the Company	Date	Increase/ Decrease in Share holding	Reason	No. of shares	% of total shares of the Company
1	Atul Sobti Chairman & Managing Director (wef 01.01.2016) & Director (Power) (upto 31.12.2015)	1500	0.00		No Change			
		1500	0.00	31.03.2016			1500	0.00
2	B. Prasada Rao Chairman & Managing Director (upto 31.12.2015)	2000	0.00		No Change			
		2000	0.00	31.12.2015			2000	0.00
3	Dr. Subhash Chandra Pandey Part-time Official Director (wef 31.03.2016)	0	0.00		No Change			
		0	0.00	31.03.2016			0	0.00
4	S.K. Bahri Part-time Official Director (upto 29.02.2016)	0	0.00		No Change			
		0	0.00	29.02.2016			0	0.00

Sl. No.	Name (S/ shri)	Shareholding at the beginning of the year (01.04.2015)/ end of the year (31.03.2016)		Date wise Increase/Decrease in Shareholding during the year specifying the reasons for Increase/Decrease			Cumulative Shareholding during the year (01.04.2015 to 31.03.2016/till cessation)	
		No. of shares	% of total shares of the Company	Date	Increase/ Decrease in Share holding	Reason	No. of shares	% of total shares of the Company
5	Rajesh Kumar Singh Part-time Official Director	0	0.00		No Change			
		0	0.00	31.03.2016			0	0.00
6	Ms. Harinder Hira Part-time Non-Official Director	0	0.00		No Change			
		0	0.00	31.03.2016			0	0.00
7	A.N. Roy Part-time Non-Official Director	0	0.00		No Change			
		0	0.00	31.03.2016			0	0.00
8	Rajesh Kishore Part-time Non-Official Director (wef 18.12.2015)	0	0.00		No Change			
		0	0.00	31.03.2016			0	0.00
9	Keshav N. Desiraju Part-time Non-Official Director (wef 18.12.2015)	0	0.00		No Change			
		0	0.00	31.03.2016			0	0.00
10	R. Swaminathan Part-time Non-Official Director (wef 18.12.2015)	0	0.00		No Change			
		0	0.00	31.03.2016			0	0.00
11	P.K. Bajpai Director (Finance) (upto 31.05.2015)	0	0.00		No Change			
		0	0.00	31.05.2015			0	0.00
12	R. Krishnan Director (HR) (upto 31.07.2015)	0	0.00		No Change			
		0	0.00	31.07.2015			0	0.00
13	W.V.K. Krishna Shankar Director (IS&P) (upto 31.08.2015)	100	0.00		No Change			
		100	0.00	31.08.2015			100	0.00
14	T.N. Veeraraghavan Director (E,R&D) (upto 30.06.2015)	500	0.00		No Change			
		500	0.00	30.06.2015			500	0.00
15	D. Bandyopadhyay Director (HR) (wef 01.08.2015)	0	0.00		No Change			
		0	0.00	31.03.2016			0	0.00
16	Amitabh Mathur Director (IS&P) (wef 01.09.2015)	0	0.00		No Change			
		0	0.00	31.03.2016			0	0.00

Sl. No.	Name (S/ shri)	Shareholding at the beginning of the year (01.04.2015)/ end of the year (31.03.2016)		Date wise Increase/ Decrease in Shareholding during the year specifying the reasons for Increase/ Decrease			Cumulative Shareholding during the year (01.04.2015 to 31.03.2016/ till cessation)	
		No. of shares	% of total shares of the Company	Date	Increase/ Decrease in Share holding	Reason	No. of shares	% of total shares of the Company
17	Subrata Biswas Director (E,R&D) (wef 24.09.2015)	0	0.00		No Change			
		0	0.00	31.03.2016			0	0.00
18	T. Chockalingam Director (Finance) (wef 11.02.2016)	0	0.00		No Change			
		0	0.00	31.03.2016			0	0.00
19	I.P. Singh Company Secretary	0	0.00		No Change			
		0	0.00	31.03.2016			0	0.00

## V. INDEBTEDNESS

Indebtedness of the Company including interest outstanding/ accrued but not due for payment

(₹ in Crore)

	Secured Loans excluding deposits	Unsecured Loans	Deposits	Total Indebtedness
<b>Indebtedness at the beginning of the financial year</b>	NIL			
i) Principal Amount				
ii) Interest due but not paid				
iii) Interest accrued but not due				
<b>Total (i+ii+iii)</b>				
<b>Change in Indebtedness during the financial year</b>				
• Addition				
• Reduction				
<b>Net Change</b>				
<b>Indebtedness at the end of the financial year</b>				
i) Principal Amount				
ii) Interest due but not paid				
iii) Interest accrued but not due				
<b>Total (i+ii+iii)</b>				

## VI. REMUNERATION OF DIRECTORS AND KEY MANAGERIAL PERSONNEL

### A. Remuneration to Managing Director, Whole-time Directors and/or Manager:

(In ₹)

Sl. no.	Particulars of Remuneration	Name of MD/ WTD/ Manager (S/ shri)					Total Amount
		B. Prasada Rao CMD *upto 31.12.15	P.K. Bajpai Director (Finance) *upto 31.05.15	R. Krishnan Director (HR) *upto 31.07.15	WVK Krishna Shankar Director (IS&P) *upto 31.08.15	T.N. Veeraraghavan Director (E, R&D) *upto 30.06.15	
1.	Gross salary						
	(a) Salary as per provisions contained in section 17(1) of the Income-tax Act, 1961	74,40,946	47,62,129	45,13,301	46,28,515	48,04,304	2,61,49,195
	(b) Value of perquisites u/s 17(2) Income-tax Act, 1961	10,90,447	5,33,903	5,12,613	7,26,276	3,28,963	31,92,202
	(c) Profits in lieu of salary under section 17(3) of Income-Tax Act, 1961						
2.	Stock Option						
3.	Sweat Equity						
4.	Commission - as % of profit - others, specify...						
5.	Others, please specify						
	<b>Total (A)#</b>	<b>85,31,393</b>	<b>52,96,032</b>	<b>50,25,914</b>	<b>53,54,791</b>	<b>51,33,267</b>	<b>2,93,41,397</b>
	Ceiling as per the Act	N.A.					

# (Includes terminal benefits on superannuation)



(In ₹)

Sl. no.	Particulars of Remuneration	Name of MD/ WTD/ Manager (S/ shri)					Total Amount
		Atul Sobti Director (Power) *upto 31.12.15 & CMD *w.e.f. 01.01.16	D. Bandyopadhyay Director (HR) *w.e.f. 01.08.15	Amitabh Mathur Director (IS&P) *w.e.f. 01.09.15	Subrata Biswas Director (E,R&D) *w.e.f. 24.09.15	T. Chockalingam Director (Finance) *w.e.f. 11.02.16	
1.	Gross salary						
	(a) Salary as per provisions contained in section 17(1) of the Income-tax Act, 1961	33,40,948	21,85,233	18,29,597	16,91,283	3,75,837	94,22,898
	(b) Value of perquisites u/s 17(2) Income-tax Act, 1961	39,600	2,30,357	23,100	2,63,120	41,254	5,97,431
	(c) Profits in lieu of salary under section 17(3) of Income-Tax Act, 1961						
2.	Stock Option						
3.	Sweat Equity						
4.	Commission - as % of profit - others, specify...						
5.	Others, please specify						
	<b>Total (A)</b>	<b>33,80,548</b>	<b>24,15,590</b>	<b>18,52,697</b>	<b>19,54,403</b>	<b>4,17,091</b>	<b>1,00,20,329</b>
	Ceiling as per the Act	N.A.					

**B. Remuneration to other Directors:**

(In ₹)

Sl. no.	Particulars of Remuneration	Name of Directors (S/ shri)					Total Amount
1.	<b>Independent Directors</b>	<b>Ms. Harinder Hira</b>	<b>A.N. Roy</b>	<b>Rajesh Kishore (w.e.f. 18.12.15)</b>	<b>Keshav N. Desiraju (w.e.f. 18.12.15)</b>	<b>R. Swaminathan (w.e.f. 18.12.15)</b>	
	• Fee for attending board/ committee meetings	4,60,000	3,60,000	1,20,000	75,000	90,000	11,05,000
	• Commission	-	-	-	-	-	-
	• Others, please specify	-	-	-	-	-	-
	<b>Total (1)</b>	<b>4,60,000</b>	<b>3,60,000</b>	<b>1,20,000</b>	<b>75,000</b>	<b>90,000</b>	<b>11,05,000</b>
2.	<b>Other Non-Executive Directors</b>	<b>S.K. Bahri (upto 29.02.16)</b>	<b>Dr. Subhash Chandra Pandey (w.e.f. 31.03.16)</b>	<b>Rajesh Kumar Singh</b>	-	-	-
	• Fee for attending board/ committee meetings	-	-	-	-	-	-
	• Commission	-	-	-	-	-	-
	• Others, please specify	-	-	-	-	-	-
	<b>Total (2)</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
	<b>Total (B)=(1+2)</b>	<b>4,60,000</b>	<b>3,60,000</b>	<b>1,20,000</b>	<b>75,000</b>	<b>90,000</b>	<b>11,05,000</b>
	Total Managerial Remuneration						
	Overall Ceiling as per the Act	Section 197 of the Companies Act, 2013 pertaining to ceiling on Managerial Remuneration including sitting fees paid to Directors is not applicable on BHEL, being a Government Company.					

**C. Remuneration to Key Managerial Personnel other than MD/ Manager/ WTD:**

(In ₹)

Sl. No.	Particulars of Remuneration	Key Managerial Personnel			Total
		CEO	I.P. Singh Company Secretary	CFO	
1.	Gross salary	As per table VI(A)	26,20,490	As per table VI(A)	
	(a) Salary as per provisions contained in section 17(1) of the Income-tax Act, 1961				
	(b) Value of perquisites u/s 17(2) Income-tax Act, 1961				
	(c) Profits in lieu of salary under section 17(3) Income-tax Act, 1961				
2	Stock Option				
3	Sweat Equity				
4	Commission - as % of profit - others, specify...				
5	Others, please specify				
	<b>Total</b>		<b>26,20,490</b>		

**VII. PENALTIES/ PUNISHMENT/ COMPOUNDING OF OFFENCES:**

Type	Section of the Companies Act	Brief Description	Details of Penalty/ Punishment/ Compounding fees imposed	Authority [RD/ NCLT/ COURT]	Appeal made, if any (give Details)
Penalty	NIL				
Punishment					
Compounding					
Other Officers in Default					
Penalty					
Punishment					
Compounding					

# Annexure-VII

## 7.1 Conservation of Energy

Energy Conservation (ENCON) is an important thrust area in BHEL. Following major activities were performed during the financial year:

- Energy Audit was conducted by specialized agencies (like CII/ PCRA/ TERI etc.) at HEP-Bhopal, HPEP-Hyderabad, EPD-Bengaluru, CFP-Rudrapur, IP-Jagdishpur and CSU & FP-Jagdishpur units
- Energy Conservation projects (thirty-six) were implemented across the company, as suggested by the specialised agencies in the Energy Audit reports. The ENCON projects included 5 Star Rated Air-Conditioners/ Fans, Energy Efficient Compressors, Energy Efficiency Lighting (LED/ CFL), SWHS (Solar Water Heating System), VFD (Variable Frequency Drives), APFC (Automatic Power Factor Control), Turbo Ventilators, Arresting Leakages, Occupancy & Photo Sensors (to turn ON/OFF lights/ AC), Replacement of conventional (old resistive type) regulators with Electronic Regulators for fans, etc.

Specific Energy Consumption (Energy/Fuel units in Kcal/ Gross Turnover-ED) has improved by 5.1% over the base level: 132 Mkcal /₹ Lacs in 2012-13

- National Energy Conservation Day was celebrated across the company on 14<sup>th</sup> December by organizing various activities related to Energy Conservation
- Implementation of Energy Management System (ISO 50001: 2011) enables the organization to establish the systems and processes necessary to improve energy performance, including energy efficiency, use and consumption. Two units (CFFP-Hardwar and Trichy unit-2) were certified as ISO 50001 compliant units

## 7.2 Technology Absorption and Research & Development

Research & Development

1. Specific areas in which R&D carried out by the Company
2. Benefits derived as a result of the above R&D
3. Future Focus areas

Given in the Directors' Report under R&D and Technological achievement (Annexure V)

The following are the major thrust areas for R&D and technology absorption :

- Conventional thermal power plants with higher efficiencies using supercritical parameters
- Conventional thermal power plants with higher efficiencies using ultra-supercritical & Advanced Ultra supercritical (Ad-USC) parameters
- Advanced control and instrumentation platform for thermal power plant and industrial application
- Coal research for better understanding of Indian coal characteristics and reducing SOx & NOx
- Atmospheric and Circulating Fluidized Bed Combustion (CFBC) boilers
- Flue Gas Desulphurization (FGD) systems
- Enhancing efficiency of the existing products
- Higher rating Industrial steam turbines
- Large size hydro power plants with higher efficiency and longer life
- Advanced transmission systems like  $\pm 800$  kV HVDC, 765 kV, 1200 kV Transmission systems/ products
- Flexible AC Transmission systems, including devices such as Thyristor Controlled Series Compensation, phase shifting transformer, static compensator (STATCOM), controlled shunt reactor, etc.
- Gas insulated switchgear upto 765 kV rating
- Efficient, reliable and cost effective transportation solutions including IGBT – based applications, three-phase AC drive system for diesel electric locos, MEMU, High speed train-sets
- Coach manufacturing for Metro and High speed train-sets
- Grid connected renewable energy systems such as solar PV, solar thermal, wind etc.
- Simulators
- Advanced Fabrication Technologies
- Surface coatings including ceramic applications
- Residual life assessment studies
- Vibration and noise reduction
- Deployment of new technologies including deployment of intelligent machines & robotics - for reducing cycle time and cost



- Specialized engineering software applications
- Knowledge Management
- Total Engineering solutions with focus on design automation/ KBE/ PLM
- Applications based on high temperature Superconductors
- Desalination and Water Treatment Plants
- Nano-technology applications
- Hydrogen energy and fuel cells
- Defence products
- Motors & IGBT Controllers and Batteries for E-Mobility

#### 4. Expenditure on R&D

1. Total	....	₹ 893.07 Crore
a) Recurring	....	₹ 886.42 Crore
b) Capital		₹ 6.65 Crore
Expenditure as a percentage of total turnover	....	3.36 %

### 7.3 Technology Absorption and Adoption

Details of technology imported during the last 5 years:

Technology	Year of import	Absorption status
Flue Gas Desulphurization (FGD) systems	2013	Technology absorption in progress

### 7.4 Foreign Exchange Earnings and Outgoings

(₹ in Crore)

	2015-16	2014-15
(i) Foreign Exchange Used	4193	4540
(ii) Foreign Exchange Earned	3650	4866

For and on behalf of the Board of Directors of  
**BHARAT HEAVY ELECTRICALS LTD**



**Atul Sobti**

Chairman & Managing Director

**Place : New Delhi**  
**Dated : August 10, 2016**

# Annexure-VIII

## Form AOC - I

(Pursuant to first proviso to sub-section (3) of section 129 read with rule 5 of Companies (Accounts) Rules, 2014)

### Statement containing salient features of the financial statement of subsidiaries/associate Companies/joint ventures

#### Part "A": Subsidiaries

(Information in respect of each subsidiary to be presented with amounts in ₹ Crore )

1.	Sl. No.	01
2.	Name of the subsidiary	BHEL ELECTRICALS MACHINES LIMITED
3.	Reporting period for the subsidiary concerned, if different from the holding company's reporting period	N.A.
4.	Reporting currency and Exchange rate as on the last date of the relevant Financial year in the case of foreign subsidiaries.	N.A.
5.	Share capital	10.50
6.	Reserves & surplus	-8.93
7.	Total assets	29.95
8.	Total Liabilities	28.39
9.	Investments	NIL
10.	Turnover (Gross)	40.96
11.	Profit before taxation	-3.97
12.	Provision for taxation	-0.99
13.	Profit after taxation	-2.98
14.	Proposed Dividend	NIL
15.	% of shareholding	51%

**Notes:** The following information shall be furnished at the end of the statement:

1.	Names of subsidiaries which are yet to commence operations	NIL
2.	Names of subsidiaries which have been liquidated or sold during the year.	NIL

**Part "B": Associates and Joint Ventures****Statement pursuant to Section 129 (3) of the Companies Act, 2013 related to Associate Companies and Joint Ventures**

(₹ in Crore)

Name of Joint Ventures	BHEL-GE Gas Turbine Services P. Ltd.	NTPC BHEL Power Projects Pvt Ltd.	Dada Dhuniwale Khandwa Power Ltd.	Raichur Power Corporation Ltd.
1. Latest Audited Balance Sheet Date	31.03.16	31.03.16#	31.03.16#	31.03.16#
2. Shares of JVs held by BHEL on the year end				
No.	2379999	50000000	22500000	589316000
Amount of investment	2.38	50.00	22.50	589.32
Extent of Holding %	50% minus one share	50%	50%	27.34%
3. Description of how there is significant influence	Jointly controlled entities			
4. Reason why the associate/ JV is not consolidated	N.A.	N.A.	N.A.	N.A.
5. Networth attributable to Shareholding as per latest audited Balance Sheet	120.30	43.39	22.88	589.32
6. Profit/ Loss for the year	As per Proportionate Consolidation Method			
i. Considered in consolidation	29.68	(-) 22.93	*	NIL**
ii. Not considered in Consolidation	-	-	-	-

# Unaudited \* Less than ₹ One lakh \*\* Pre- operative expenses considered in Capital WIP

M/s Latur Power Company Ltd. & M/S Power Plant Performance Improvement Ltd. is under liquidation. Hence, both these JVs were not considered in consolidation.z

**For and on behalf of Board of Directors**
  
**(I.P. Singh)**  
 Company Secretary

  
**(T. Chockalingam)**  
 Director (Finance)

  
**(Atul Sobti)**  
 Chairman and Managing Director

As per our report of even date attached

**For Wahi & Gupta**  
 Chartered Accountants  
**FRN-002263N**
  
**(CA Y K Gupta)**  
 Partner  
 M.No.016020

**For DSP & Associates**  
 Chartered Accountants  
**FRN-006791N**
  
**(CA Sanjay Jain)**  
 Partner  
 M.No. 084906

**For S B A & Company**  
 Chartered Accountants  
**FRN-004651C**
  
**(CA Vikas Jain)**  
 Partner  
 M.No. 078245

Place : New Delhi  
 Date : May 27, 2016

## Form AOC - 2

(Pursuant to clause (h) of sub-section (3) of section 134 of the Act and Rule 8(2) of the Companies (Accounts) Rules, 2014)

**Form for disclosure of particulars of contracts/arrangements entered into by the company with related parties referred to in sub-section (1) of section 188 of the Companies Act, 2013 including certain arm's length transactions under third proviso thereto**

### 1. Details of contracts or arrangements or transactions not at arm's length basis:

- |   |       |
|---|-------|
| (a) Name(s) of the related party and nature of relationship   | : NIL |
| (b) Nature of contracts/arrangements/transactions   | : NIL |
| (c) Duration of the contracts/arrangements/transactions   | : NIL |
| (d) Salient terms of the contracts or arrangements or transactions including the value, if any                        | : NIL |
| (e) Justification for entering into such contracts or arrangements or transactions                                    | : NA  |
| (f) Date(s) of approval by the Board  | : NIL |
| (g) Amount paid as advances, if any   | : NIL |
| (h) Date on which the special resolution was passed in general meeting as required under first proviso to section 188 | : NIL |

### 2. Details of material contracts or arrangement or transactions at arm's length basis:

- |   |       |
|---|-------|
| (a) Name(s) of the related party and nature of relationship                                     | : NIL |
| (b) Nature of contracts/arrangements/transactions   | : NIL |
| (c) Duration of the contracts/arrangements/transactions   | : NIL |
| (d) Salient terms of the contracts or arrangements or transactions including the value, if any: | : NA  |
| (e) Date(s) of approval by the Board, if any  | : NIL |
| (f) Amount paid as advances, if any   | : NIL |

For and on behalf of the Board of Directors of  
BHARAT HEAVY ELECTRICALS LIMITED



**Atul Sobti**

Chairman & Managing Director

**Place : New Delhi**  
**Dated : August 10, 2016**



# Annexure-IX

## Independent Auditors' Report

**To the Members of  
Bharat Heavy Electricals Limited**

### Report on the Financial Statements

We have audited the accompanying financial statements of **Bharat Heavy Electricals Limited** ("the Company"), which comprise the Balance Sheet as at March 31, 2016, and the Statement of Profit and Loss and Cash Flow Statement for the year then ended, and a summary of significant accounting policies and other explanatory information in which are incorporated the returns for the year ended on that date audited by us for 16 branches and 18 branches audited by the branch auditors of the company.

### Management's Responsibility for the Standalone Financial Statements

The Company's Board of Directors is responsible for the matters stated in Section 134(5) of the Companies Act, 2013 ("the Act") with respect to the preparation of these standalone financial statements that give a true and fair view of the financial position, financial performance and cash flows of the Company in accordance with the accounting principles generally accepted in India, including the Accounting Standards specified under Section 133 of the Act, read with Rule 7 of the Companies (Accounts) Rules, 2014. This responsibility also includes maintenance of adequate accounting records in accordance with the provisions of the Act for safeguarding the assets of the Company and for preventing and detecting frauds and other irregularities; selection and application of appropriate accounting policies; making judgments and estimates that are reasonable and prudent; and design, implementation and maintenance of adequate internal financial controls, that were operating effectively for ensuring the accuracy and completeness of the accounting records, relevant to the preparation and presentation of the financial statements that give a true and fair view and are free from material misstatement, whether due to fraud or error.

### Auditor's Responsibility

Our responsibility is to express an opinion on these standalone financial statements based on our audit.

We have taken into account the provisions of the Act, the accounting and auditing standards and matters which are required to be included in the audit report under the provisions of the Act and the Rules made thereunder.

We conducted our audit in accordance with the Standards on Auditing specified under Section 143(10) of the Act. Those Standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and the disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal financial control relevant to the Company's preparation of the financial statements that give a true and fair view in order to design audit procedures that are appropriate in the circumstances. An audit also includes evaluating the appropriateness of the accounting policies used and the reasonableness of the accounting estimates made by the Company's Directors, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion on the standalone financial statements.

### Opinion

In our opinion and to the best of our information and according to the explanations given to us, the aforesaid

standalone financial statements give the information required by the Act in the manner so required and give a true and fair view in conformity with the accounting principles generally accepted in India:

- (a) In the case of the Balance Sheet, of the state of affairs of the company as at March 31, 2016;
- (b) In the case of the Statement of Profit and Loss, of the Loss for the year ended on that date; and
- (c) In the case of the Cash Flow Statement, of the cash flows for the year ended on that date.

### Other Matter

We did not audit the financial statements/information of 18 ( Eighteen) branches included in the standalone financial statements of the Company whose financial statements/financial information reflect total assets of ₹ 37337.65 crores as at 31st March, 2016 and total revenue of ₹ 13006.97 crores for the year ended on that date, as considered in the standalone financial statements. The financial statements/information of these branches have been audited by the branch auditors whose reports have been furnished to us, and our opinion in so far as it relates to the amounts and disclosures included in respect of these branches, is based solely on the report of such branch auditors.

Our opinion is not modified in respect of this matter.

### Report on Other Legal and Regulatory Requirements

- (1) As required by the Companies (Auditor's Report) Order, 2016 ("the Order") issued by the Central Government of India in terms of sub-section (11) of section 143 of the Act, we give in the "Annexure A" a statement on the matters specified in paragraphs 3 and 4 of the Order, to the extent applicable.
- (2) As required by Section 143 (3) of the Act, we report that:
  - (a) We have sought and obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purposes of our audit.
  - (b) In our opinion, proper books of account as required by law have been kept by the Company so far as it appears from our

examination of those books and proper returns adequate for the purposes of our audit have been received from the branches not visited by us;

- (c) The reports on the accounts of the branch offices of the Company audited under Section 143 (8) of the Act by branch auditors have been sent to us and have been properly dealt with by us in preparing this report.
- (d) The Balance Sheet, the Statement of Profit and Loss, and the Cash Flow Statement dealt with by this Report are in agreement with the books of account and with the returns received from the branches not visited by us.
- (e) In our opinion, the aforesaid standalone financial statements comply with the Accounting Standards specified under Section 133 of the Act, read with Rule 7 of the Companies (Accounts) Rules, 2014.
- (f) Being a Government Company, Section 164(2) of the Companies Act, 2013 regarding 'whether any director is disqualified from being appointed as a director' is not applicable to the Company in view of Notification no. G.S.R. 463(E) dtd. 05-06-2015
- (g) With respect to the adequacy of the internal financial controls over financial reporting of the Company and the operating effectiveness of such controls, refer to our separate Report in "Annexure B".
- (h) With respect to the other matters to be included in the Auditor's Report in accordance with Rule 11 of the Companies (Audit and Auditors) Rules, 2014, in our opinion and to the best of our information and according to the explanations given to us:
  - i. The Company has disclosed the impact of pending litigations on its financial position in its financial statements – Refer Note 31 (5) to the financial statements.

- ii. The Company has made provision, as required under the applicable law and accounting standards, for material foreseeable losses, if any, on long-term contracts – Refer Note 31 (11) to the financial statements.
- iii. There has been no delay in transferring amounts, required to be transferred, to the Investor Education and Protection Fund by the Company.
- (3) As required by section 143(5) of the Act, we have considered the directions issued by the Comptroller and Auditor General of India, the action taken thereon and its impact on the accounts and financial statements of the company –Refer Annexure C attached.

**For Wahi & Gupta**  
Chartered Accountants  
**FRN 002263N**



**(CA Y K Gupta)**  
Partner  
M.No.016020

**For DSP & Associates**  
Chartered Accountants  
**FRN 006791N**



**(CA Sanjay Jain)**  
Partner  
M.No. 084906

**For SBA & Company**  
Chartered Accountants  
**FRN 004651C**



**(CA Vikas Jain)**  
Partner  
M.No. 078245

**Place : New Delhi**  
**Date : May 27, 2016**

## "Annexure A" to Independent Auditors' Report

**(Referred to in Paragraph 1 under the heading "Report on Other Legal and Regulatory Requirements" of our report of even date on the accounts of Bharat Heavy Electricals Limited ("the Company"), for the year ended March 31, 2016)**

- i) (a) The Company has maintained proper records showing full particulars including quantitative details and situation of its fixed assets.
- (b) According to the information and explanations given to us, physical verification of fixed assets is being conducted in a phased manner by the management under a programme designed to cover all the fixed assets over a period of three years, which, in our opinion, is reasonable having regard to the size of the Company and nature of its business and no material discrepancies were noticed on such verification to the extent verification was made during the year.
- (c) The details of title deeds of immovable properties not held in the name of the company are given in note 31(2)(a) (i to iii) to the Financial Statements.
- ii) As explained to us physical verification of inventory has been conducted by the management under Perpetual Inventory Programme at regular intervals during the year except for stock of work in progress and finished goods in few units where these are verified at the year end with reference to the inspection reports and production reports of the Production Planning Department of such units. In regard to stocks lying with contractors/fabricators and other parties, confirmations were received in few cases only. In our opinion the frequency of verification is reasonable.
- iii) According to the information given to us, the Company has not granted any loans, secured or unsecured to companies, firms, Limited Liability Partnerships or other parties covered in the register maintained under section 189 of the Companies Act, 2013. Therefore clauses (iii) (a), (iii) (b) and (iii)(c) of Paragraph 3 of the Order are not applicable to the Company.
- iv) The Company has complied with the provisions of the section 185 and 186 of the Companies Act, 2013 in respect of loans, investments, guarantees, and security.
- v) According to the information and explanations given to us, the Company has not accepted any deposits from public during the year within the meaning of sections 73 to 76 or any other relevant provisions of the Companies Act, 2013 and the Companies (Acceptance of Deposits) Rules 2014.
- vi) We have broadly reviewed the books of account and records maintained by the Company pursuant to the Companies (Cost Records and Audit) Rules 2014 prescribed by the Central Government under section 148(1) of the Companies Act, 2013 and are of the opinion that prima facie the prescribed accounts and records have been made and maintained. We have, however, not made a detailed examination of the cost records with a view to determine whether they are accurate and complete.
- vii) (a) According to the information and explanations given to us, in our opinion, the Company is generally regular in depositing with appropriate authorities undisputed statutory dues including Provident Fund, Employees' State Insurance, Income Tax, Sales Tax, Service Tax, duty of Customs, duty of Excise, Value Added Tax, Cess and any other statutory dues as applicable to it.
- (b) According to the information and explanations given to us, no undisputed amounts payable in respect of Provident Fund, Employees State Insurance, Income Tax, Sales Tax, Service Tax, duty of Customs, duty of Excise, Value Added Tax, Cess and any other statutory dues were outstanding as at March 31, 2016 for a period of more than six months from the date they became payable.
- (c) According to the information and explanations given to us, the particulars of Income Tax, Sales Tax,



Service Tax, duty of Customs, duty of Excise and Value Added Tax which have not been deposited on account of dispute are as under:

(₹ in Crore)

Sl. No.	Name of the Statute	Nature of the Dues	Pending Amount	Amount paid under protest	Forum where dispute is pending
1	Central Sales Tax Act, Value Added Tax and Sales Tax Act of various States	Sales Tax, VAT	30.97	3.81	Assessing Officer
			398.59	58.31	Dy. Commissioner/ Jt. Commissioner/ Commissioner (Appeals)
			378.08	133.27	Appellate Tribunal
			43.47	22.33	High Court
			2.87	2.83	Supreme Court
			399.34	26.05	Various Appellate Authorities
2	Income Tax Act, 1961	Income Tax	0.81	-	Assessing Officer
			0.05	-	Commissioner (Appeals)
			0.10	-	High Court
3	Central Excise Act, 1944	Excise Duty	41.84	4.37	Commissioner (Appeals)
			369.86	13.69	Appellate Tribunal
			55.70	4.96	High Court
			0.55	0.55	Supreme Court
			-	-	Various Appellate Authorities
4	Service Tax under the Finance Act, 1994	Service Tax	1.56	0.74	Commissioner (Appeals)
			468.51	6.54	Appellate Tribunal
			15.10	-	High Court
			0.77	0.06	Various Appellate Authorities
5	Customs Act, 1962	Custom duty	0.10	-	Assessing Officer

viii) According to the records of the Company examined by us and the information and explanations given to us, the Company has not defaulted in repayment of loans or borrowings to financial institutions, banks, government. The company has not issued any debentures.

ix) Provisions of clause no. (ix) relating to utilization of moneys raised by way of initial public offer or further public offer including debt instruments and term loans is not applicable to the Company as no such moneys raised during the year.

- x) During the course of our examination of the books and records of the Company, carried out in accordance with the generally accepted auditing practices in India, and according to the information and explanations given to us, no fraud by the Company or any fraud on the Company by its officers or employees has been noticed or reported during the year.
- xi) Being a Government Company, provision of clause no. (xi) regarding section 197 of the Companies Act, 2013 relating to managerial remuneration is not applicable to the Company in view of Notification no. G.S.R. 463(E) dtd. 05-06-2015.
- xii) Provisions of clause no. (xii) regarding Nidhi Company is not applicable to the Company;
- xiii) According to the records of the Company examined by us and the information and explanations given to us, the related party transactions are in compliance with section 177 and 188 of the Companies Act, 2013 and have been disclosed in the Financial Statements.
- xiv) Provision of clause no. (xiv) reg. preferential allotment or private placement of shares or fully or partly convertible debentures during the year is not applicable to the Company as no such preferential allotment or private placement took place during the year.
- xv) The company has not entered into any non-cash transactions with directors or persons connected with him.
- xvi) The Company is not required to be registered under section 45-IA of the Reserve Bank of India. Act, 1934.

**For Wahi & Gupta**  
Chartered Accountants  
**FRN 002263N**



**(CA Y K Gupta)**  
Partner  
M.No.016020

**For DSP & Associates**  
Chartered Accountants  
**FRN 006791N**



**(CA Sanjay Jain)**  
Partner  
M.No. 084906

**For SBA & Company**  
Chartered Accountants  
**FRN 004651C**



**(CA Vikas Jain)**  
Partner  
M.No. 078245

**Place : New Delhi**  
**Date : May 27, 2016**

## **“Annexure B” to the Independent Auditor’s Report of even date on the Standalone Financial Statements of Bharat Heavy Electricals Limited**

### **Report on the Internal Financial Controls under Clause (i) of Sub-section 3 of Section 143 of the Companies Act, 2013 (“the Act”)**

We have audited the internal financial controls over financial reporting of M/s Bharat Heavy Electricals Limited (“the Company”) as of March 31, 2016 in conjunction with our audit of the standalone financial statements of the Company for the year ended on that date.

### **Management’s Responsibility for Internal Financial Controls**

The Company’s management is responsible for establishing and maintaining internal financial controls based on the internal control over financial reporting criteria established by the Company considering the essential components of internal control stated in the Guidance Note on Audit of Internal Financial Controls over Financial Reporting issued by the Institute of Chartered Accountants of India. These responsibilities include the design, implementation and maintenance of adequate internal financial controls that were operating effectively for ensuring the orderly and efficient conduct of its business, including adherence to company’s policies, the safeguarding of its assets, the prevention and detection of frauds and errors, the accuracy and completeness of the accounting records, and the timely preparation of reliable financial information, as required under the Companies Act, 2013

### **Auditors’ Responsibility**

Our responsibility is to express an opinion on the Company’s internal financial controls over financial reporting based on our audit. We conducted our audit in accordance with the Guidance Note on Audit of Internal Financial Controls Over Financial Reporting (the “Guidance Note”) and the Standards on Auditing, issued by ICAI and deemed to be prescribed under section 143(10) of the Companies Act, 2013, to the extent applicable to an audit of internal financial controls, both applicable to an audit of Internal Financial Controls and, both issued by the Institute of Chartered Accountants of India. Those Standards and the Guidance Note require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether adequate internal financial controls over financial reporting was established and maintained and if such controls operated effectively in all material respects.

Our audit involves performing procedures to obtain audit evidence about the adequacy of the internal financial controls system over financial reporting and their operating effectiveness. Our audit of internal financial controls over financial reporting included obtaining an understanding of internal financial controls over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. The procedures selected depend on the auditor’s judgement, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion on the Company’s internal financial controls system over financial reporting.

### **Meaning of Internal Financial Controls Over Financial Reporting**

A company’s internal financial control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company’s internal financial control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the

company are being made only in accordance with authorisations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorised acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

### Inherent Limitations of Internal Financial Controls Over Financial Reporting

Because of the inherent limitations of internal financial controls over financial reporting, including the possibility of collusion or improper management override of controls, material misstatements due to error or fraud may occur and not be detected. Also, projections of any evaluation of the internal financial controls over financial reporting to future periods are subject to the risk that the internal financial control over financial reporting may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

### Opinion

In our opinion, the Company has, in all material respects, an adequate internal financial controls system over financial reporting and such internal financial controls over financial reporting were operating effectively as at March 31, 2016, based on the internal control over financial reporting criteria established by the Company considering the essential components of internal control stated in the Guidance Note on Audit of Internal Financial Controls Over Financial Reporting issued by the Institute of Chartered Accountants of India.

**For Wahi & Gupta**  
Chartered Accountants  
**FRN 002263N**



**(CA Y K Gupta)**  
Partner  
M.No.016020

**For DSP & Associates**  
Chartered Accountants  
**FRN 006791N**



**(CA Sanjay Jain)**  
Partner  
M.No. 084906

**For SBA & Company**  
Chartered Accountants  
**FRN 004651C**



**(CA Vikas Jain)**  
Partner  
M.No. 078245

**Place : New Delhi**  
**Date : May 27, 2016**



**"Annexure-C"**

**Directions indicating the areas to be examined by the Statutory Auditors during the course of audit of annual accounts of Bharat Heavy Electricals Limited (Standalone) for the year 2015-16 issued by the Comptroller & Auditor General of India under Section 143(5) of the Companies Act, 2013**

Sl. No.	Areas Examined	Suggested Replies
1	Whether the Company has clear title/lease deeds for freehold and leasehold land respectively? If not, please state the area of freehold and leasehold land for which title/lease deeds are not available.	<p>a) Clear Title/lease deeds : - No</p> <p>b) If answer to (a) above is No, then :</p> <p>(i) Freehold area (Acres) : 8455.87</p> <p>(ii) Leasehold area (Acres) : 477.40</p> <p>(Note : In respect of freehold land as above, almost in all the cases, the same is acquired from State Governments on right to use basis and is categorized under freehold)</p>
2	Whether there are any cases of waiver/write off of debts/loans/ interest etc. If yes, the reasons thereof and amount involved.	Debtors amounting to ₹ 23.59 Crores have been written-off during the FY 2015-16 on account of LD levied & recovered by the customers and due to various disallowance/recoveries made by customer. These are old cases and necessary approval for write off have been taken from competent authorities.
3	Whether proper records are maintained for inventories lying with third parties and assets received as gift/grant(s) from the Govt. or other authorities.	Proper records are being maintained for the inventories lying with third parties & assets received as gift/grant(s) from Govt. or other authorities. However, during the year there is no case of assets received as gift/grant(s) from Govt. or other authorities.

**For Wahi & Gupta**  
Chartered Accountants  
FRN 002263N



**(CA Y K Gupta)**  
Partner  
M.No.016020

**For DSP & Associates**  
Chartered Accountants  
FRN 006791N



**(CA Sanjay Jain)**  
Partner  
M.No. 084906

**For SBA & Company**  
Chartered Accountants  
FRN 004651C



**(CA Vikas Jain)**  
Partner  
M.No. 078245

**Place : New Delhi**  
**Date : May 27, 2016**



गोपनीय

No./MAB-III/Rep./01-05/A/cs-BHEL/2016-17/560

भारतीय लेखा परीक्षा और लेखा विभाग

कार्यालय

प्रधान निदेशक, वाणिज्यिक लेखा परीक्षा

एवं एडेन सदस्य लेखा परीक्षा बोर्ड-III

नई दिल्ली

**INDIAN AUDIT & ACCOUNTS DEPARTMENT**

OFFICE OF THE

PRINCIPAL DIRECTOR OF COMMERCIAL AUDIT

& EX-OFFICIO MEMBER, AUDIT BOARD-III

NEW DELHI

दिनांक/Date: 20/7/2016

सेवा में,

उप्युक्त एवं प्रबंध निदेशक,

भारत हेवी इलेक्ट्रिकल्स लिमिटेड,

नई दिल्ली

**विषय:** 31 मार्च 2016 को समाप्त वर्ष के लिये भारत हेवी इलेक्ट्रिकल्स लिमिटेड, नई दिल्ली के वार्षिक लेखाओं पर कम्पनी अधिनियम 2013 की धारा 143(6)(b) के अन्तर्गत भारत के नियंत्रक-महालेखा परीक्षक की टिप्पणियाँ।

महोदय,

मैं भारत हेवी इलेक्ट्रिकल्स लिमिटेड, नई दिल्ली के 31 मार्च 2016 को समाप्त वर्ष के लेखाओं पर कम्पनी अधिनियम 2013 की धारा 143(6)(b) के अंतर्गत भारत के नियंत्रक-महालेखापरीक्षक की टिप्पणियाँ उल्लेखित कर रही हूँ। कृपया इस पत्र की संलग्नकों सहित प्राप्ति की पावती भेजी जाए।

संलग्न- यथोपरि

सजदीया,

रितिका

(रितिका भाटिया)

प्रधान निदेशक

**COMMENTS OF THE COMPTROLLER AND AUDITOR GENERAL OF INDIA UNDER SECTION 143(6)(b) OF THE COMPANIES ACT, 2013 ON THE FINANCIAL STATEMENTS OF BHARAT HEAVY ELECTRICALS LIMITED FOR THE YEAR ENDED 31 MARCH 2016**

The preparation of financial statements of Bharat Heavy Electricals Limited for the year ended 31 March 2016 in accordance with the financial reporting framework prescribed under the Companies Act, 2013(Act) is the responsibility of the management of the company. The statutory auditors appointed by the Comptroller and Auditor General of India under Section 139(5) of the Act are responsible for expressing opinion on the financial statements under Section 143 of the Act based on independent audit in accordance with standards on auditing prescribed under Section 143(10) of the Act. This is stated to have been done by them vide their Audit Report dated 27 May 2016.

I, on the behalf of the Comptroller and Auditor General of India, have conducted a supplementary audit under Section 143(6)(a) of the Act of the financial statements of Bharat Heavy Electricals Limited for the year ended 31 March 2016. This supplementary audit has been carried out independently without access to the working papers of the statutory auditors and is limited primarily to inquiries of the statutory auditors and company personnel and a selective examination of some of the accounting records. On the basis of my audit nothing significant has come to my knowledge which would give rise to any comment upon or supplement to statutory auditor's report.

For and on behalf of the  
Comptroller & Auditor General of India



(Ritika Bhatia)  
Principal Director of Commercial Audit &  
Ex-officio Member, Audit Board – III,  
New Delhi

Place: New Delhi  
Dated: 26 July 2016

## Another leap in efficient transmission!



In view of the compact design of GIS (Gas Insulated Substation) and the advantage it provides with respect to the optimisation of land use, there is a shift in demand from AIS (Air Insulated Substation) to GIS based substations. BHEL has made its foray into 400 kV GIS by securing the first commercial order from NHPC for construction of a 400 kV GIS bay at 3X180 MW Chamara-I HEP in Himachal Pradesh. The order would be executed within a timeframe of 18 months. This would pave the path for BHEL to get established as an OEM for EHV range GIS in near future.

149	<u>Financial Statements Standalone</u>
196	<u>Consolidated Financial Statements</u>



## Financial Statements





# Balance Sheet

As at 31<sup>st</sup> March, 2016

(₹ in Crore)

Particulars	Note No.	Figures as at 31.03.2016		Figures as at 31.03.2015	
<b>I. EQUITY AND LIABILITIES</b>					
<b>(1) Shareholders' Funds</b>					
(a) Share capital	1	489.52		489.52	
(b) Reserves & surplus	2	32563.83	33053.35	33595.08	34084.60
<b>(2) Non-current liabilities</b>					
(a) Long-term borrowings	3	126.29		61.00	
(b) Other Long-term liabilities	4	4587.89		5358.84	
(c) Long-term provisions	5	7986.03	12700.21	6802.30	12222.14
<b>(3) Current liabilities</b>					
(a) Short-term borrowings	6	-		-	
(b) Trade payables	7	8702.05		8798.94	
(c) Other current liabilities	8	8779.73		9123.31	
(d) Short-term provisions	9	3454.76	20936.54	4238.14	22160.39
<b>TOTAL</b>			<b>66690.10</b>		<b>68467.13</b>
<b>II. ASSETS</b>					
<b>(1) Non current assets</b>					
(a) Fixed assets	10				
(i) Tangible assets		3825.83		3982.20	
(ii) Intangible assets		137.36		158.32	
(iii) Capital work-in-progress		306.98		500.50	
(iv) Intangible assets under development		8.38	4278.55	17.30	4658.32
(b) Non-current investments	11	663.40		417.67	
(c) Deferred tax assets (net)	12	3134.83		2220.73	
(d) Long-term loans and advances	13	900.22		1218.83	
(e) Other non-current assets	14	11174.07	15872.52	11413.82	15271.05
<b>(2) Current assets</b>					
(a) Inventories	15	9637.39		10105.10	
(b) Trade receivables	16	24428.98		26223.50	
(c) Cash and Bank Balances	17	10085.99		9812.70	
(d) Short term loans and advances	18	2264.59		2221.43	
(e) Other current assets	19	122.08	46539.03	175.03	48537.76
<b>TOTAL</b>			<b>66690.10</b>		<b>68467.13</b>

## Significant Accounting Policies

### Other notes to financial statements

31

The accompanying notes 1 to 31 & significant accounting policies form an integral part of the financial statements.

For and on behalf of Board of Directors

  
(I.P. Singh)  
Company Secretary

  
(T. Chockalingam)  
Director (Finance)

  
(Atul Sobti)  
Chairman and Managing Director

As per our report of even date attached

For Wahi & Gupta  
Chartered Accountants  
FRN-002263N

For DSP & Associates  
Chartered Accountants  
FRN-006791N

For S B A & Company  
Chartered Accountants  
FRN-004651C

  
(CA Y K Gupta)  
Partner  
M.No.016020

  
(CA Sanjay Jain)  
Partner  
M.No. 084906

  
(CA Vikas Jain)  
Partner  
M.No. 078245

Place : New Delhi  
Date : May 27, 2016

## Statement of Profit and Loss

For the year ended 31<sup>st</sup> March, 2016

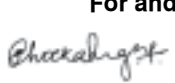
(₹ in Crore)

Particulars	Note No.	Figures for the current year ended 31.03.2016	Figures for the previous year ended 31.03.2015
<b>I. Revenue from operations (Gross)</b>	<b>20</b>	<b>26586.51</b>	<b>30947.04</b>
Less : Excise duty		<b>958.63</b>	<b>920.42</b>
Less : Service tax and Swachh Bharat Cess		<b>490.00</b>	<b>484.65</b>
<b>Revenue from operations (Net)</b>		<b>25137.88</b>	<b>29541.97</b>
<b>II. Other operational income</b>	<b>21</b>	<b>492.11</b>	<b>700.17</b>
<b>III. Other income</b>	<b>22</b>	<b>1450.08</b>	<b>1220.45</b>
<b>Total revenue (I to III)</b>		<b>27080.07</b>	<b>31462.59</b>
<b>IV. Expenses</b>			
Cost of material consumption, erection and engineering expenses	<b>23</b>	<b>16397.98</b>	<b>17758.32</b>
(Increase)/Decrease in work in progress & finished goods	<b>24</b>	<b>210.50</b>	<b>-338.04</b>
Employees benefits expense	<b>25</b>	<b>5541.15</b>	<b>5450.00</b>
Finance costs	<b>26</b>	<b>26.82</b>	<b>91.65</b>
Depreciation & amortisation expense	<b>10.1</b>	<b>935.64</b>	<b>1077.32</b>
Other expenses of manufacture, administration, selling and distribution	<b>27</b>	<b>3030.54</b>	<b>3696.49</b>
Provisions (net)	<b>28</b>	<b>2454.84</b>	<b>1604.23</b>
Less: Cost of jobs done for internal use		<b>46.57</b>	<b>27.50</b>
<b>Total expenses</b>		<b>28550.90</b>	<b>29312.47</b>
<b>V. Profit before prior period adjustments and tax</b>		<b>-1470.83</b>	<b>2150.12</b>
<b>VI. Add/less: Prior period adjustments (net)</b>	<b>29</b>	<b>-5.88</b>	<b>-10.11</b>
<b>VII. Profit before tax for the year</b>		<b>-1476.71</b>	<b>2140.01</b>
<b>VIII. Less: Tax expense</b>	<b>30</b>		
a) Current tax		<b>350.81</b>	<b>951.07</b>
b) Deferred tax		<b>-914.10</b>	<b>-230.35</b>
<b>IX. Profit for the year</b>		<b>-913.42</b>	<b>1419.29</b>
Earnings per share (Basic & Diluted) in ₹		<b>-3.73</b>	<b>5.80</b>
(Refer para no. 19 of Note no. 31)			
Face Value per share (in ₹)		<b>2.00</b>	<b>2.00</b>
<b>Significant Accounting Policies</b>			
<b>Other notes to financial statements</b>	<b>31</b>		

The accompanying notes 1 to 31 & significant accounting policies form an integral part of the financial statements.

For and on behalf of Board of Directors

  
**(I.P. Singh)**  
Company Secretary

  
**(T. Chockalingam)**  
Director (Finance)

  
**(Atul Sobti)**  
Chairman and Managing Director

As per our report of even date attached

**For Wahi & Gupta**  
Chartered Accountants  
**FRN-002263N**

  
**(CA Y K Gupta)**  
Partner  
M.No.016020

**For DSP & Associates**  
Chartered Accountants  
**FRN-006791N**

  
**(CA Sanjay Jain)**  
Partner  
M.No. 084906

**For S B A & Company**  
Chartered Accountants  
**FRN-004651C**

  
**(CA Vikas Jain)**  
Partner  
M.No. 078245

Place : New Delhi  
Date : May 27, 2016

# Cash Flow Statement

for the year ended 31.03.2016

(₹ in Crore)

	2015-16	2014-15
<b>A. CASH FLOW FROM OPERATING ACTIVITIES</b>		
Net Profit Before Tax as per Statement of Profit and Loss	<b>-1476.71</b>	<b>2140.01</b>
Adjustment for		
Depreciation/Amortisation	935.72	1077.65
Lease Equalisation	0.71	0.60
Provisions (Net)	2413.67	1125.16
Bad Debts & LD & investment written off	23.60	62.69
Profit on sale of Fixed assets	-5.75	-5.74
Finance cost	26.82	91.65
Interest/Dividend Income	-797.13	-840.92
Operating Profit before Working Capital changes	<b>1120.93</b>	<b>3651.10</b>
Adjustment for		
Trade & Other Receivables	24.77	1115.59
Inventories	382.41	-354.43
Trade Payable & Advances	-876.49	-2606.88
Cash generated from operations	<b>651.62</b>	<b>1805.38</b>
Direct Taxes Paid (Net of refund)	-307.41	-1029.90
<b>NET CASH INFLOW / (OUTFLOW) FROM OPERATING ACTIVITIES</b>	<b>344.21</b>	<b>775.48</b>
<b>B. CASH FLOW FROM INVESTING ACTIVITIES</b>		
Purchase of Fixed Assets	-583.85	-500.43
Sale and Disposal of Fixed Assets	33.23	43.66
Investment in Subsidiary & Joint Ventures (net)	-245.73	2.50
Interest & Dividend income	849.29	918.58
<b>Net Cash used in Investing Activities</b>	<b>-52.94</b>	<b>-464.31</b>
<b>C. CASH FLOW FROM FINANCING ACTIVITIES</b>		
Short term & Long term Borrowing (Net)	84.61	-2604.62
Dividend Paid (including tax on dividend)	-183.09	-594.02
Finance cost	-25.38	-101.38
<b>Net Cash used in Financing Activities</b>	<b>123.86</b>	<b>3300.02</b>
<b>D. NET INCREASE/(DECREASE) IN CASH AND CASH EQUIVALENTS</b>	<b>273.29</b>	<b>-2060.23</b>
Opening Balance of Cash and Cash Equivalents	9812.70	11872.93
Closing Balance of Cash and Cash Equivalents (Refer Note no.17)	10085.99	9812.70


Note 1 : Cash &amp; Cash Equivalents consists of cash and bank balance &amp; deposits with banks.

2 : Previous year's figures have been regrouped/rearranged wherever necessary.

3 : Cash &amp; Cash Equivalents includes ₹ 3.27 Crore (previous year ₹ 3.72 Crore) unclaimed dividend lying in designated bank accounts

For and on behalf of Board of Directors

  
**(I.P. Singh)**  
 Company Secretary

  
**(T. Chockalingam)**  
 Director (Finance)

  
**(Atul Sobti)**  
 Chairman and Managing Director

As per our report of even date attached

**For Wahi & Gupta**  
 Chartered Accountants  
**FRN-002263N**
**For DSP & Associates**  
 Chartered Accountants  
**FRN-006791N**
**For S B A & Company**  
 Chartered Accountants  
**FRN-004651C**
  
**(CA Y K Gupta)**  
 Partner  
 M.No.016020

  
**(CA Sanjay Jain)**  
 Partner  
 M.No. 084906

  
**(CA Vikas Jain)**  
 Partner  
 M.No. 078245

**Place : New Delhi**  
**Date : May 27, 2016**

## 1 - Share capital

(₹ in Crore)

	Figures as at 31.03.2016		Figures as at 31.03.2015	
<b>Authorised</b>				
1000,00,00,000 equity shares of ₹ 2 each (previous year 1000,00,00,000 equity shares of ₹ 2 each)		<b>2000.00</b>		2000.00
<b>Issued, Subscribed &amp; Paid up Capital</b>		<b>489.52</b>		489.52
244,76,00,000 fully paid equity Shares of ₹ 2 each (previous year 244,76,00,000 equity shares of ₹ 2 each)				
a) The reconciliation of the number of equity shares outstanding is set out below :				
	<b>Number</b>	<b>Amount</b>	<b>Number</b>	<b>Amount</b>
Shares outstanding at the beginning of the year	<b>2447600000</b>	<b>489.52</b>	2447600000	489.52
Shares bought back during the year	-	-	-	-
Shares outstanding at the end of the year	<b>2447600000</b>	<b>489.52</b>	2447600000	489.52
b) Details of shares held by shareholders holding more than 5% shares at the year end	<b>No. of shares</b>	<b>% age of holding</b>	<b>No. of shares</b>	<b>% age of holding</b>
President of India (POI) alongwith nominees	<b>1543452000</b>	<b>63.06%</b>	1543452000	63.06%
Life Insurance Corporation of India	<b>230453920</b>	<b>9.42%</b>	230516784	9.42%
Face Value per share (₹)		<b>2.00</b>		2.00
c) Terms / rights attached to the equity shares:				
The company has only one class of equity shares having a par value of ₹ 2 per share (previous year ₹ 2 per share). Each holder of the equity shares is entitled to one vote per share.				



## 2 - Reserves & surplus

	(₹ in Crore)	
	Figures as at 31.03.2016	Figures as at 31.03.2015
<b>Capital reserve</b>		
Opening Balance	36.56	36.56
Add: Addition	- 36.56	- 36.56
<b>General reserve</b>		
Opening balance	32349.72	31349.72
Add: transfer from surplus i.e. balance in statement of profit and loss		1000.00
Less: Deductions	- 32349.72	- 32349.72
<b>Surplus i.e. balance in statement of profit and loss</b>		
Opening Balance	1208.80	1171.25
Less: Depreciation Adjustment	-	40.50
Add: profit for the year	-913.42	1419.29
Profit available for appropriation	295.38	2550.04
Less: Appropriation-		
- General reserve	0.00	1000.00
- Dividend (including interim dividend of ₹ Nil crore previous year ₹132.17 crore)	97.90	283.92
- Corporate dividend tax (including tax on interim dividend ₹ Nil crore previous year ₹ 26.43 crore)	19.93 177.55	57.32 1208.80
	32563.83	33595.08
<b>Proposed dividend on equity per share (₹)</b>	<b>0.40</b>	<b>0.62</b>

### 3 - Long-term borrowings

(₹ in Crore)

	Figures as at 31.03.2016	Figures as at 31.03.2015
Unsecured		
Long term maturities of finance lease obligations	126.29	61.00
	<u>126.29</u>	<u>61.00</u>

### 4 - Other long-term liabilities

(₹ in Crore)

	Figures as at 31.03.2016	Figures as at 31.03.2015
Trade payables	786.93	701.66
Advances received from customers & others	3675.75	4563.02
Deposits from contractors & others	125.21	94.16
	<u>4587.89</u>	<u>5358.84</u>

### 5 - Long-term provisions

(₹ in Crore)

	Figures as at 31.03.2016	Figures as at 31.03.2015
Provision for employee benefits	2989.26	2706.52
Contractual obligation	4523.84	3597.96
Other long-term provisions	439.66	452.73
Corporate social responsibility	33.27	45.09
	<u>7986.03</u>	<u>6802.30</u>

### 6 - Short-term borrowings

(₹ in Crore)

	Figures as at 31.03.2016	Figures as at 31.03.2015
<b>Secured</b>		
<b>Cash credit</b>	-	-
(secured by first charge by way of hypothecation of raw materials, work-in-progress, finished goods, stores & spares book debts and other assets both present and future)	-	-

### 7 - Trade payables

(₹ in Crore)

	Figures as at 31.03.2016	Figures as at 31.03.2015
Trade payables	8665.88	8754.83
Acceptances	36.17	44.11
	<u>8702.05</u>	<u>8798.94</u>

(Trade payables includes for Micro & Small Enterprises ₹ 194.82 crore ( previous year ₹ 202.01 crore).  
(Refer to para 10 note 31 for micro and small enterprises disclosure)

## 8 - Other current liabilities

(₹ in Crore)

	Figures as at 31.03.2016	Figures as at 31.03.2015
Current maturities of finance lease obligation	76.15	56.83
Advances received from customers & others	6710.66	6969.36
Deposits from contractors & others	529.14	517.16
Unclaimed dividend *	3.27	3.72
Other payables/ liabilities		
- Capital Expenditure	134.31	193.49
- Statutory dues	422.33	454.62
- Employees dues	208.37	322.08
- Other dues	687.17	599.16
Interest accrued but not due	0.57	0.40
Interest accrued and due on:		
State Government Loans	2.33	2.33
Finance lease	5.43	4.16
	<b>8779.73</b>	<b>9123.31</b>

Advances received from customers & others include valuation adjustment-

- ₹ 2865.39 Crore (previous year ₹ 2637.89 Crore)

\* There is no amount due & outstanding as at balance sheet date to be transferred to Investor Education & Protection Fund.

## 9 - Short-term provisions

(₹ in Crore)

	Figures as at 31.03.2016	Figures as at 31.03.2015
Provision for employee benefits	587.25	574.45
Proposed Dividend	97.90	151.75
Corporate dividend tax	19.93	30.89
Contractual obligation	1629.66	2511.19
Other short-term provisions	1064.31	952.01
Corporate social responsibility	55.71	17.85
	<b>3454.76</b>	<b>4238.14</b>

## 10 - Fixed assets

(₹ in Crore)

	Figures as at 31.03.2016	Figures as at 31.03.2015
<b>(i) Tangible assets</b>		
Gross block	12828.56	12146.48
Less: Accumulated depreciation	9004.27	8166.53
Less: Lease adjustment account	-1.54	-2.25
Net Block	3825.83	3982.20
<b>(ii) Intangible assets</b>		
Gross block	469.39	442.29
Less: Accumulated depreciation/amortisation	332.03	283.97
Net block	137.36	158.32
<b>(iii) Capital work in progress</b>		
Construction work-in-progress -Civil	81.65	72.38
Construction stores (including in transit)	3.93	2.88
Plant & machinery and other equipment		
-Under Erection/ Fabrication/awaiting erection	151.41	352.32
-In transit	69.99	72.92
	306.98	500.50
<b>(iv) Intangible assets under development</b>	8.38	17.30
<b>Total</b>	<b>4278.55</b>	<b>4658.32</b>
Refer to details in Note no. 10.1		



## Note 10.1

## Fixed Assets

(₹ in Crore)

	Gross Block				Depreciation					Net Block	
	Cost As at 01.04.2015	Additions/ adjustments during the year	Deductions/ adjustments during the year	Cost As at 31.03.2016	Accumulated Depreciation/ Amortisation As at 01.04.2015	Depreciation for the year	Depreciation adjustments	Lease Adjustment Account	Accumulated Depreciation/ Amortisation upto 31.03.2016	As at 31.03.2016	As at 31.03.2015
<b>Factory/ Office Complex</b>											
<b>(i) Tangible assets</b>											
Freehold land (incl. development exp.)	25.14			25.14						25.14	25.14
Leasehold land (incl. development exp.)	60.27		0.02	60.25	1.68	0.63	-0.02		2.29	57.96	58.60
Roads, bridges and culverts	28.64	0.02		28.66	18.02	4.54	-0.01		22.55	6.11	10.62
Buildings	1883.56	123.15	12.79	1993.92	785.32	82.74	-11.99		856.07	1137.85	1098.24
Leasehold buildings	3.12			3.12	1.49	0.05			1.54	1.58	1.63
Drainage, sewerage and water supply	29.65			29.65	13.90	0.74			14.64	15.01	15.75
Railway siding	19.51			19.51	10.78	0.93			11.71	7.80	8.73
Locomotives and wagons	55.24			55.24	27.16	3.12			30.28	24.96	28.08
Plant & Machinery	7602.32	326.97	8.57	7920.72	5426.10	623.79	-8.19		6041.70	1879.02	2176.22
Electronic data processing equipment	204.45	33.17		237.62	200.16	4.97	16.83		221.96	15.66	4.29
Electrical installations	344.88	11.20	0.66	355.42	169.94	29.71	-0.74		198.91	156.51	174.94
Construction Equipment	269.65	12.98	1.99	280.64	221.20	23.03	-1.97		242.26	38.38	48.45
Vehicles	24.82	2.51	0.18	27.15	18.61	1.45	-0.18		19.88	7.27	6.21
Furniture & fixtures	60.47	7.56	0.44	67.59	26.93	7.76	-0.28		34.41	33.18	33.54
Office & other equipment	203.99	14.67	0.65	218.01	143.75	29.39	-0.25		172.89	45.12	60.24
Fixed assets costing upto ₹10000/-	116.14	4.25	1.18	119.21	116.14	4.35	-1.28		119.21		
Assets Given on Lease	497.15			497.15	497.15			1.54	497.15	1.54	2.25
EDP Equipment taken on lease	368.61	118.30	21.09	465.82	317.95	45.43	-31.79		331.59	134.23	50.66
Office & other equipment taken on lease	4.17	29.68	18.26	15.59	2.55	8.98	-7.52		4.01	11.58	1.62
Other assets taken on lease	1.95			1.95	1.81	0.10	0.04		1.95	0.00	0.14
<b>Total Tangible Assets-Factory</b>	<b>11803.73</b>	<b>684.46</b>	<b>65.83</b>	<b>12422.36</b>	<b>8000.64</b>	<b>871.71</b>	<b>-47.35</b>	<b>1.54</b>	<b>8825.00</b>	<b>3598.90</b>	<b>3805.35</b>
<b>(ii) Intangible Assets</b>											
-Internally developed											
Others	68.43	23.99		92.42	48.46	11.87	8.80		69.13	23.29	19.97
-Others											
Software	161.16	3.10	0.01	164.25	142.22	11.97	-0.02		154.17	10.08	18.94
Technical Know-how	188.50	8.82		197.32	79.36	20.97	-0.58		99.75	97.57	109.14
Others	24.20		8.80	15.40	13.93	3.85	-8.80		8.98	6.42	10.27
<b>Total intangible Assets-Factory</b>	<b>442.29</b>	<b>35.91</b>	<b>8.81</b>	<b>469.39</b>	<b>283.97</b>	<b>48.66</b>	<b>-0.60</b>		<b>332.03</b>	<b>137.36</b>	<b>158.32</b>
<b>Total of Factory Assets</b>	<b>12246.02</b>	<b>720.37</b>	<b>74.64</b>	<b>12891.75</b>	<b>8284.61</b>	<b>920.37</b>	<b>-47.95</b>	<b>1.54</b>	<b>9157.03</b>	<b>3736.26</b>	<b>3963.67</b>

## Note 10.1

### Fixed Assets

(₹ in Crore)

	Gross Block				Depreciation					Net Block	
	Cost As at 01.04.2015	Additions/ adjustments during the year	Deductions/ adjustments during the year	Cost As at 31.03.2016	Accumulated Depreciation/ Amortisation As at 01.04.2015	Depreciation for the year	Depreciation adjustments	Lease Adjustment Account	Accumulated Depreciation/ Amortisation upto 31.03.2016	As at 31.03.2016	As at 31.03.2015
<b>Township/ Residential</b>											
<b>Tangible assets</b>											
Freehold land (incl. development exp.)	2.54			2.54						2.54	2.54
Leasehold land (incl. development exp.)	11.68	41.40		53.08	0.78	0.22			1.00	52.08	10.89
Roads, bridges and culverts	7.81	0.06		7.87	5.95	1.84	-1.13		6.66	1.21	1.86
Buildings	217.35	14.63	1.88	230.10	84.71	5.98			90.69	139.41	132.64
Leasehold buildings	0.27			0.27	0.27	0.06	-0.06		0.27		
Drainage, sewerage and water supply	22.73	4.22	0.01	26.94	15.87	1.00	-0.45		16.42	10.52	6.86
Plant and Machinery	26.27	1.16	0.06	27.37	16.98	1.73	0.44		18.35	9.02	10.09
Electronic Data Processing Equipment	0.05	0.01		0.06	0.02	0.67	-0.65		0.04	0.02	0.03
Electrical installations	21.67	1.24		22.91	16.97	0.63	0.58		18.18	4.73	4.70
Vehicles	0.92			0.92	0.90	0.02	-0.01		0.91	0.01	0.02
Furniture & fixtures	1.55	0.91	0.05	2.41	0.87	0.58	-0.31		1.14	1.27	0.68
Office & other equipment	26.79	1.84	0.76	27.87	20.25	2.34	-0.40		22.19	5.68	6.54
Fixed assets costing up to ₹ 10000/-	3.12	0.22		3.34	3.12	0.12	0.10		3.34		
Assets taken on lease											
- EDP Equipment		0.52		0.52		0.08			0.08	0.44	
<b>Total Tangible Assets-Township</b>	<b>342.75</b>	<b>66.21</b>	<b>2.76</b>	<b>406.20</b>	<b>165.89</b>	<b>15.27</b>	<b>-1.89</b>		<b>179.27</b>	<b>226.93</b>	<b>176.85</b>
<b>Total of Township Assets</b>	<b>342.75</b>	<b>66.21</b>	<b>2.76</b>	<b>406.20</b>	<b>165.89</b>	<b>15.27</b>	<b>-1.89</b>		<b>179.27</b>	<b>226.93</b>	<b>176.85</b>
<b>Total of Tangible Assets</b>	<b>12146.48</b>	<b>750.67</b>	<b>68.59</b>	<b>12828.56</b>	<b>8166.53</b>	<b>886.98</b>	<b>-49.24</b>	<b>1.54</b>	<b>9004.27</b>	<b>3825.83</b>	<b>3982.20</b>
<b>Total of Intangible Assets</b>	<b>442.29</b>	<b>35.91</b>	<b>8.81</b>	<b>469.39</b>	<b>283.97</b>	<b>48.66</b>	<b>-0.60</b>		<b>332.03</b>	<b>137.36</b>	<b>158.32</b>
<b>Total of Factory &amp; Township</b>	<b>12588.77</b>	<b>786.58</b>	<b>77.40</b>	<b>13297.95</b>	<b>8450.50</b>	<b>935.64</b>	<b>-49.84</b>	<b>1.54</b>	<b>9336.30</b>	<b>3963.19</b>	<b>4140.52</b>
<b>Previous year</b>	<b>12050.49</b>	<b>625.69</b>	<b>87.41</b>	<b>12588.77</b>	<b>7360.39</b>	<b>1077.32</b>	<b>12.79</b>	<b>2.25</b>	<b>8450.50</b>	<b>4140.52</b>	<b>4692.94</b>
<b>The details of R&amp;D capital items included in above</b>											
<b>Plant &amp; Machinery &amp; other Equipment</b>	<b>531.04</b>	<b>28.87</b>	<b>0.23</b>	<b>559.68</b>	<b>351.08</b>	<b>45.89</b>	<b>0.07</b>		<b>397.04</b>	<b>162.64</b>	<b>179.96</b>
<b>Building</b>	<b>41.47</b>	<b>0.08</b>		<b>41.55</b>	<b>18.78</b>	<b>1.23</b>			<b>20.01</b>	<b>21.54</b>	<b>22.68</b>

Gross Block as at 31.03.2016 includes assets condemned and retired from active use ₹ **98.92 Crore** (Previous year ₹ 122.03 Crore)

Net Block as at 31.03.2016 includes assets condemned and retired from active use ₹ **0.37 Crore** (Previous year ₹ 1.29 Crore)

Gross Block excludes cost of assets purchased out of grant received from Govt of India for research as executing agency since the property does not vest with the Company.

	2015-16	2014-15
₹ in Crore	49.31	49.16

There is no impairment loss in fixed assets during the year.

## 11 - Non-current investments

(₹ in Crore)

	Figures as at 31.03.2016		Figures as at 31.03.2015	
<b>Long Term Investments (at cost)</b>				
Unquoted Shares(Fully paid up):				
<b>TRADE:</b>				
1892 (previous year 1892) Equity shares of ₹ 10/- each (Previous year ₹ 10 each) of Engineering Projects (India) Ltd.	*		*	
728960 (previous year 728960) Equity shares of ₹ 10/- each of AP Gas Power Corporation Ltd.	0.91		0.91	
5000000 (Previous year 5000000) Equity shares of ₹ 10/- each of Neelachal Ispat Nigam Ltd.	5.00	5.91	5.00	5.91
<b>Subsidiary Company</b>				
5355000 (previous year 5355000) Equity Shares of ₹ 10/- each of BHEL Electrical Machines Ltd.	5.36		5.36	
Less: Provision for diminution in value	5.36	0.00		5.36
<b>Joint Ventures Companies</b>				
1999999 (previous year 1999999) Equity Shares of ₹ 10/- each of Powerplant Performance Improvement Ltd.	2.00		2.00	
Less: Provision for diminution in value	2.00	0.00	2.00	0.00
- 22500000 (previous year 22500000) Equity Shares of ₹ 10/- each of Dada Dhuniwale Khandwa Power Ltd.	22.50		22.50	
Less: Provision for diminution in value	6.71	15.79	-	22.50
- 50000000 (previous year 50000000) Equity Shares of ₹ 10/- each of NTPC-BHEL Power Projects Pvt. Ltd.		50.00		50.00
- 589316000 (previous year 331523312) Equity Shares of ₹ 10/- each of Raichur Power Corporation Ltd.		589.32		331.52
- 2379999 (previous year 2379999) Equity Shares of ₹ 10/- each of BHEL-GE Gas Turbine Services Pvt. Ltd.		2.38		2.38
<b>OTHER THAN TRADE:</b>				
250 shares (Previous year 250) of ₹10/- each of BHPV Employees Consumers Cooperative Stores Ltd.		*		*
10 shares (Previous year 10) of ₹ 50/- each of Cuffe Parade Persopolis Premises Cooperative Society Ltd., Mumbai		*		*
20 shares of ₹ 50/- each (Previous year 20) of Hill View Cooperative Housing Society Ltd., Mumbai		*		*
Share Money paid in advance to M/s. Rita Enterprises, Mumbai for allotment of 50 shares of ₹ 10 each		*		*
Share Money paid in advance to M/s. Asish Enterprises, Mumbai for allotment of 50 shares of ₹ 10 each		*		*
* Value of less than ₹ 1 lakh/-				
	663.40		417.67	
<b>Aggregate value of Unquoted Investments</b>	663.40		417.67	
<b>Aggregate provision in diminution in value of Investments</b>	14.07		2.00	

## 12 - Deferred tax assets (Net)

(₹ in Crore)

	Figures as at 31.03.2016	Figures as at 31.03.2015
Provisions	2339.53	1512.23
Statutory dues	680.55	639.32
Adjustment as per Sec 145A		2.88
Depreciation	104.81	57.48
Others	9.94	8.82
	<u>3134.83</u>	<u>2220.73</u>
Deferred tax liabilities	-	-
<b>Deferred tax assets (net)</b>	<u>3134.83</u>	<u>2220.73</u>

## 13- Long term loans and advances

(₹ in Crore)

	Figures as at 31.03.2016	Figures as at 31.03.2015
<b>Loans</b>		
Loans to employees	0.01	0.01
Loans to public sector undertakings ( Bharat Pumps and Compressor Ltd. for capital investment)	0.00	4.00
Interest accrued and or due on loans	<u>0.11</u> <u>0.12</u>	<u>0.17</u> <u>4.18</u>
<b>Sub classification:-</b>		
Secured, considered good ₹ 0.04 crore (previous year ₹ 4.02 crore)		
Unsecured, considered good ₹ 0.08 crore (previous year ₹ 0.16 crore)		
<b>Advances (recoverable in cash or in kind or for value to be received)</b>		
For purchases	79.63	336.12
Capital advance	34.83	35.12
To Others	<u>57.89</u> <u>172.35</u>	<u>57.95</u> <u>429.19</u>
<b>Sub classification:-</b>		
Unsecured, considered good ₹ 160.75 crore (previous year ₹ 416.51 crore)		
Doubtful ₹ 11.60 crore (previous year ₹ 12.68 crore)		
<b>Deposits</b>		
Balance with customs, port trust and other govt authorities	93.91	78.32
Other deposits	70.28	108.01
Advance tax/TDS (Net of provision for taxation ₹ 6252.31 crore (Previous year ₹ 5909.46 crore)	<u>598.79</u> <u>762.98</u>	<u>642.19</u> <u>828.52</u>
<b>Sub classification:-</b>		
Unsecured, considered good ₹ 739.35 crore (previous year ₹ 798.14 crore)		
Doubtful ₹ 23.63 crore (previous year ₹ 30.38 crore)		
Less: Provisions for doubtful advances & deposits	<u>35.23</u>	<u>43.06</u>
	<u>900.22</u>	<u>1218.83</u>
<b>Includes:</b>		
Due from Directors	-	-
Due from Officers	-	0.01



## 14 - Other non-current assets

(₹ in Crore)

	Figures as at 31.03.2016		Figures as at 31.03.2015	
Long term trade receivables	15425.54		14731.78	
Less: Provision for bad & doubtful debts	3822.27		2956.71	
Less: Automatic price reduction adjustment	429.20	11174.07	361.25	11413.82
		<u>11174.07</u>		<u>11413.82</u>

**Sub classification: Long term trade receivables**

Secured, considered good

Unsecured, considered good ₹ 11174.07 crore (previous year ₹ 11413.82 crore)

Doubtful ₹ 4251.47 crore (previous year ₹ 3317.96 crore )

Long term trade receivables include deferred debts-

-₹ 10496.88 crore (previous year ₹ 10219.60 crore)

## 15 - Inventories

(₹ in Crore)

	Figures as at 31.03.2016		Figures as at 31.03.2015	
Raw material & components	3890.51		4090.04	
Material-in-transit	552.22	4442.73	467.45	4557.49
Work-in-progress (including items with sub-contractors)		3252.97		3210.72
Finished goods	1568.55		1743.74	
Inter division transfers in transit	134.32	1702.87	201.99	1945.73
Stores & spare parts				
Production	214.54		224.08	
Fuel stores	6.19		5.50	
Miscellaneous	50.80	271.53	46.55	276.13
Materials with fabricators/contractors		93.85		145.17
Loose tools		33.71		35.29
Scrap (at estimated realisable value)		62.16		71.54
Less: Provision for non-moving inventory		222.43		136.97
		<u>9637.39</u>		<u>10105.10</u>

Refer to Significant accounting policy No. 9 regarding mode of valuation

## 16 - Trade receivables

(₹ in Crore)

	Figures as at 31.03.2016	Figures as at 31.03.2015
Debts outstanding for a period exceeding six months	17723.34	15418.12
Particulars of trade receivables :		
Unsecured, considered good ₹ 14795.75 crore (previous year ₹ 13693.75 crore)		
Doubtful ₹ 2927.59 crore (previous year ₹ 1724.37 crore )		
Other debts	9737.13	12567.25
Particulars of trade receivables :		
Unsecured, considered good ₹ 9633.23 crore (previous year ₹ 12529.75 crore)		
Doubtful ₹ 103.90 crore (previous year ₹ 37.50 crore)		
	27460.47	27985.37
Less : Provision for bad & doubtful debts & automatic price reduction adjustment	3031.49	1761.87
	24428.98	26223.50
Trade receivables include deferred debts-		
-(₹ 8036.68 crore (previous year ₹ 7047.77 crore)		
Trade receivables include goods despatched pending billing-		
-(₹ 678.80 crore (previous year ₹ 1191.93 crore)		
Trade receivables include valuation adjustment-		
-(₹ 1294.90 crore (previous year ₹ 1708.44 crore)		

## 17 - Cash & bank balances

(₹ in Crore)

	Figures as at 31.03.2016	Figures as at 31.03.2015
<b>Cash &amp; cash equivalents</b>		
Balances with banks *	1552.87	2510.46
Cheques, demand drafts on hand	412.73	290.74
Cash & stamps in on hand	0.49	0.58
<b>Other Bank Balances</b>		
Fixed deposit having maturity more than 3 months but not more than 12 months	8119.90	7010.09
Fixed deposit having maturity more than 12 months	0.00	0.83
	10085.99	9812.70
<b>* Includes</b>		
Earmarked against unclaimed dividend	3.27	3.72
Non-repatriable account	4.28	4.11

## 18 - Short term loans and advances

(₹ in Crore)

	Figures as at 31.03.2016		Figures as at 31.03.2015	
<b>Loans</b>				
Loans to Subsidiary Companies	3.00		0.00	
Loans to employees	0.00		0.01	
Loans to public sector undertakings (Bharat Pumps and Compressor Ltd. for capital investment)	12.00		8.00	
Interest accrued and or due on loans	2.78	17.78	1.93	9.94
<b>Sub classification:-</b>				
Secured, considered good ₹ 12.02 crore (previous year ₹ 8.04 crore)				
Unsecured, considered good ₹ 5.76 crore (previous year ₹ 1.90 crore)				
<b>Advances (recoverable in cash or in kind or for value to be received)</b>				
To subsidiaries	0.28		0.59	
To employees	34.71		39.08	
For purchases	491.09		463.74	
To others	1133.57	1659.65	1197.76	1701.17
<b>Sub classification:-</b>				
Secured, considered good ₹ 0.54 crore (previous year ₹ 0.05 crore)				
Unsecured, considered good ₹ 1560.97 crore (previous year ₹ 1616.61 crore)				
Doubtful ₹ 98.14 crore (previous year ₹ 84.51 crore)				
<b>Deposits</b>				
Balance with customs, Port Trust and other Govt Authorities	507.32		493.81	
Others	201.02	708.34	129.58	623.39
<b>Sub classification:-</b>				
Secured, considered good				
Unsecured, considered good ₹ 685.30 crore (previous year ₹ 594.83 crore)				
Doubtful ₹ 23.04 crore (previous year ₹ 28.56 crore)				
<b>Less: Provision for doubtful advances &amp; deposits</b>		121.18		113.07
		<u>2264.59</u>		<u>2221.43</u>
Includes:				
Due from Directors		-		-
Due from officers		0.12		0.14

## 19 - Other current assets

(₹ in Crore)

	Figures as at 31.03.2016	Figures as at 31.03.2015
Interest Accrued on banks deposits	122.08	175.03
	<u>122.08</u>	<u>175.03</u>

## 20 - Revenue from operations

(₹ in Crore)

	Figures for the current year ended 31.03.2016	Figures for the previous year ended 31.03.2015
Sales less returns (gross)	21784.68	24463.73
Income from external erection & other services & revenue from works contract	4801.83	6483.31
	<u>26586.51</u>	<u>30947.04</u>
Refer para no. 28a of note no. 31		

## 21 - Other operational Income

(₹ in Crore)

	Figures for the current year ended 31.03.2016	Figures for the previous year ended 31.03.2015
Export Incentives	34.24	100.33
Rental income on leased assets	0.93	0.93
Lease equalisation account	-0.71	-0.60
Scrap sale	158.56	243.92
Receipt from sale/transfer of surplus stock	0.03	0.06
Others	299.06	355.53
	<u>492.11</u>	<u>700.17</u>

## 22 - Other income

(₹ in Crore)

	Figures for the current year ended 31.03.2016	Figures for the previous year ended 31.03.2015
<b>A. Other income</b>		
Profit from sale of fixed assets & capital stores (net)	5.75	5.74
Dividend	34.14	29.80
Exchange variation (net)	356.33	0.00
Others (including grants of ₹ NIL (prev year ₹ NIL) from Govt of India for R & D Projects)	290.87	373.79
<b>Total (A)</b>	<u>687.09</u>	<u>409.33</u>
<b>B. Interest income *</b>		
From customers	0.00	0.07
From banks	685.75	798.27
Others	77.24	12.78
<b>Total (B)</b>	<u>762.99</u>	<u>811.12</u>
*TDS ₹ 70.54 crore (previous year ₹ 81.05 crore)		
<b>Total Other Income</b>	<u>1450.08</u>	<u>1220.45</u>



## 23 - Cost of material consumption, erection and engineering expenses

(₹ in Crore)

	Figures for the current year ended 31.03.2016	Figures for the previous year ended 31.03.2015
Consumption of raw material & components	13001.86	13703.99
Consumption of stores & spares	422.24	472.54
Erection and engineering exp. - payment to subcontractors	2973.88	3581.79
	<u>16397.98</u>	<u>17758.32</u>

## 24 - Increase/(Decrease) in work in progress &amp; finished goods

(₹ in Crore)

	Figures for the current year ended 31.03.2016	Figures for the previous year ended 31.03.2015
<b>Work -in -progress</b>		
Closing Balance	3252.97	3210.72
Opening Balance	<u>3210.72</u>	<u>3013.69</u>
	42.25	197.03
<b>Finished goods</b>		
Closing Balance	1568.55	1743.74
Opening Balance	<u>1743.74</u>	<u>1498.80</u>
	-175.19	244.94
<b>Inter-division transfer in transit</b>	-77.56	-103.93
	<u>-210.50</u>	<u>338.04</u>
<b>Note :</b>		
<b>Element of Excise duty in Finished Goods</b>		
Closing Balance	154.59	128.31
Opening Balance	128.31	130.62

## 25 - Employee benefits expense

(₹ in Crore)

	Figures for the current year ended 31.03.2016	Figures for the previous year ended 31.03.2015
Salaries, wages, bonus, allowances & other benefits	4569.51	4503.07
Contribution to gratuity fund	127.07	89.44
Contribution to provident and other funds	337.28	334.67
Group insurance	11.52	11.89
Staff welfare expenses	495.77	510.93
	<u>5541.15</u>	<u>5450.00</u>

## 26 - Finance costs

(₹ in Crore)

	Figures for the current year ended 31.03.2016	Figures for the previous year ended 31.03.2015
Interest expense	26.74	91.65
Interest on income tax	0.08	0.00
	26.82	91.65
Less: Borrowing Cost capitalised	-	-
	26.82	91.65

## 27 - Other expenses of manufacture, administration, selling & distribution

(₹ in Crore)

	Figures for the current year ended 31.03.2016	Figures for the previous year ended 31.03.2015
Royalty, technical, Resident consultant's charges & other consultancy charges	102.15	118.58
Rent	81.40	82.04
Excise duty	197.11	225.16
Power & Fuel	499.06	554.57
Rates & taxes	68.00	74.30
Service tax & Swachh Bharat Cess	15.24	9.94
Exchange variation (Net)	0.00	386.42
Insurance	135.86	123.02
Repairs:		
Buildings	90.67	88.29
Plant & machinery	42.73	43.64
Others	133.47	133.09
Other expenses in connection with exports	21.18	23.79
Losses written off	0.01	0.02
Bad debts written off	17.01	31.43
Carriage outward	371.10	391.56
Travelling & conveyance	146.27	164.53
Miscellaneous expenses	992.60	1049.86
Liquidated damages charged off	6.58	31.24
Donations	0.00	0.01
Corporate social responsibility (Refer to para no 22 of note 31)	110.10	165.00
	3030.54	3696.49

## 28 - Provisions (net)

(₹ in Crore)

	Figures for the current year ended 31.03.2016		Figures for the previous year ended 31.03.2015	
<b>Doubtful debts, liquidated damages and loans &amp; advances</b>				
Created during the year	2832.19		1765.23	
Less: written back during the year	613.74	2218.45	802.82	962.41
<b>Contractual obligations</b>				
Created during the year	733.50		1047.26	
Less: written back during the year	692.33	41.17	568.19	479.07
<b>Others</b>				
Created during the year	435.40		494.14	
Less: written back during the year	240.18	195.22	331.39	162.75
		2454.84		1604.23

## 29 - Prior period adjustments (net)

(₹ in Crore)

	Figures for the current year ended 31.03.2016		Figures for the previous year ended 31.03.2015	
<b>Income</b>				
Sales less returns	-5.33		-10.36	
Other operational income	1.24		-	
Other income	0.00	-4.09	0.66	-9.70
<b>Expenditure</b>				
Payment to Subcontractor	1.75		0.66	
Depreciation	0.08		0.33	
Misc. Expenses	-0.04	1.79	-0.58	0.41
		-5.88		-10.11

## 30 - Tax expense

(₹ in Crore)

	Figures for the current year ended 31.03.2016		Figures for the previous year ended 31.03.2015	
<b>a) Current tax</b>				
for current year	356.05		1005.33	
for earlier years	-5.24	350.81	-54.26	951.07
<b>b) Deferred tax charge /(credit)</b>				
for current year	-901.84		-340.38	
for earlier years	-12.26	-914.10	110.03	-230.35
		-563.29		720.72

## Significant Accounting Policies

### 1 Basis of preparation of Financial Statements

The financial statements have been prepared as of a going concern on historical cost convention and on accrual method of accounting in accordance with the generally accepted accounting principles and the provisions of the Companies Act, 2013 as adopted consistently by the Company.

### 2 Use of Estimates

The preparation of financial statements in conformity with generally accepted accounting principles requires the Management to make estimates and assumptions that affect the income and expenditure during the reporting period and the assets and liabilities including contingent liabilities at the date of financial statements. The differences between actual results and estimates are recognized in the period in which results are known.

### 3 Fixed Assets

Fixed assets (other than land acquired free from State Government) are carried at the cost of acquisition or construction or book value less accumulated depreciation and impairment, if any.

Cost includes value of internal transfers for capital works, taken at actual / estimated factory cost or market price, whichever is lower. Effect of extraordinary events such as devaluation / revaluation in respect of long term liabilities / loans utilized for acquisition of fixed assets is added to / reduced from the cost.

Land acquired free of cost from the State Government is valued at Re.1/- except for that acquired after 16th July 1969, in which case the same is valued at the acquisition price of the State Government concerned, by corresponding credit to capital reserve.

### 4 Leases

#### FINANCE LEASE

##### A) (i) Assets Given on Lease Prior to 1<sup>st</sup> April 2001

Assets manufactured and given on

finance lease are capitalised at the normal sale price/fair value/contracted price and treated as sales.

Depreciation on the same is charged at the rate applicable to similar type of fixed assets as per Accounting Policy on 'Depreciation'. Against lease rentals, matching charge is made through Lease Equalisation Account.

Finance income is recognized over the lease period.

##### (ii) Assets Given on Lease on or after 1<sup>st</sup> April 2001

Assets manufactured and given on finance lease are recognized as sales at normal sale price / fair value / NPV.

Finance income is recognized over the lease period.

Initial direct costs are expensed at the commencement of lease.

##### B) Assets Taken on Lease on or after 1<sup>st</sup> April 2001

Assets taken on lease are capitalised at fair value / NPV / contracted price.

Depreciation on the same is charged at the rate applicable to similar type of fixed assets as per Accounting Policy on 'Depreciation'. If the lease assets are returnable to the lessor on expiry of lease period, the same is depreciated over its useful life or lease period, whichever is shorter.

Lease payments made are apportioned between finance charges and reduction of outstanding liability in relation to assets taken on lease.

#### OPERATING LEASE

##### A) Assets Given on Lease:

Assets manufactured and given on operating lease are capitalised. Lease income arising there from is recognized as income over the lease period.

##### B) Assets Taken on Lease:

Lease payments made for assets taken on operating lease are recognized as expense over the lease period.



## 5 Intangible Assets

- A) Intangible assets are capitalised at cost if
- it is probable that the future economic benefits that are attributable to the asset will flow to the company, and
  - the company will have control over the assets, and
  - the cost of these assets can be measured reliably and is more than ₹10,000/- Intangible assets are amortised over their estimated useful lives not exceeding three years in case of software and not exceeding ten years in case of others on a straight line pro-rata monthly basis.
- B)
- Expenditure on research including the expenditure during the research phase of Research & Development Projects is charged to Statement of profit and loss in the year of incurrence.
  - Expenditure incurred on Development including the expenditure during the development phase of Research & Development Project meeting the criteria as per Accounting Standard on Intangible Assets, is treated as intangible asset.
  - Fixed assets acquired for purposes of research and development are capitalised.

## 6 Borrowing Costs

Borrowing costs that are attributable to the manufacture, acquisition or construction of qualifying assets, are included as part of the cost of such assets.

A qualifying asset is one that necessarily takes more than twelve months to get ready for intended use or sale.

Other borrowing costs are recognized as expense in the period in which they are incurred.

## 7 Depreciation

- Depreciation on fixed assets (other than those used abroad under contract) is charged upto the total cost of the assets on straight-line method as per the useful life prescribed in Schedule II of the Companies Act, 2013, except where estimated useful life is shorter based on technically assessed

estimated useful life as shown hereunder:-

	(Years)
General plant & machinery	12.5
Automatic/semi- automatic machines	10
Erection equipment, Capital tools & tackles	5
Railway sidings, Locomotives & wagons	12.5
Drainage, sewerage & water supply	30
Servers and networks	5

In respect of additions to/deductions from the fixed assets, depreciation is charged on pro-rata monthly basis.

- Where useful life of a part of the asset (costing at least ₹1 cr or 10% of the cost of the asset, whichever is higher) is different from the useful life of the remaining asset, useful life of that part is determined separately and depreciation charged accordingly.
- Fixed assets used outside India pursuant to long term contracts are depreciated over the duration of the initial contract.
- Fixed assets costing ₹10,000/- or less and those whose written down value as at the beginning of the year is ₹10,000/- or less, are depreciated fully. In so far as township buildings are concerned, the cost per tenement is the basis for the limit of ₹10,000/-.
- At erection/project sites: The cost of roads, bridges and culverts is fully amortized over the tenure of the contract, while sheds, railway sidings, electrical installations and other similar enabling works (other than temporary structures) are so depreciated after retaining 5% as residual value.
- Temporary structures are fully depreciated in the year of construction.
- Leasehold Land and Buildings are amortised over the period of lease. Buildings constructed on land taken on lease are depreciated over their useful life or the lease period, whichever is earlier.

## 8 Investments

- Long-term investments are carried at cost. Decline, other than temporary, in the value of such investments, is recognized and provided for.

- (ii) Current investments are carried at cost or quoted/fair value whichever is lower. Unquoted current investments are carried at cost.
- (iii) The cost of investment includes acquisition charges such as brokerage, fees and duties. Any reduction in the carrying amount & any reversals of such reductions are charged or credited to the Statement of profit and loss.

## 9 Inventory Valuation

- (i) Inventory is valued at actual/estimated cost or net realisable value, whichever is lower.
- (ii) Finished goods in Plant and work in progress involving Hydro and Thermal sets including gas based power plants, boilers, boiler auxiliaries, compressors and industrial turbo sets are valued at actual/estimated factory cost or at 97.5% of the realisable value, whichever is lower.
- (iii) In respect of valuation of finished goods in plant and work-in-progress, cost means factory cost; actual/estimated factory cost includes excise duty payable on manufactured goods.
- (iv) In respect of raw material, components, loose tools, stores and spares cost means weighted average cost.
- (v) **a) For Construction contracts entered into on or after 01.04.2003:**  
Where current estimates of cost and selling price of a contract indicates loss, the anticipated loss in respect of such contract is recognized immediately irrespective of whether or not work has commenced.
- b) For all other contracts:**  
Where current estimates of cost and selling price of an individually identified project forming part of a contract indicates loss, the anticipated loss in respect of such project on which the work had commenced, is recognized.
- c)** In arriving at the anticipated loss, total income including incentives on exports/deemed exports is taken into consideration.
- (vi) The components and other materials purchased / manufactured against production orders but declared surplus are

charged off to revenue retaining residual value based on technical estimates.

## 10 Revenue Recognition

Sales are recorded based on significant risks and rewards of ownership being transferred in favour of the customer. Sales include goods dispatched to customers by partial shipment.

### A. For construction contracts entered into on or after 1.4.2003

Revenue is recognized on percentage completion method based on the percentage of actual cost incurred upto the reporting date to the total estimated cost of the contract.

### B. For all other contracts

- (i) Recognition of sales revenue in respect of long production cycle items (Hydro and Thermal sets including gas-based power plants, boilers, boiler auxiliaries, compressors and industrial turbo sets) is made on technical estimates. When the aggregate value of shipments represents 30% or more of the realizable value, they are considered at 97.5% of the realizable value or in its absence, quoted price. Otherwise, they are considered at actual/estimated factory cost or 97.5% of the realizable value, whichever is lower. The balance 2.5% is recognized as revenue on completion of supplies under the contract.
- (ii) Income from erection and project management services is recognized on work done based on: Percentage of completion; or  
The intrinsic value, reckoned at 97.5% of contract value, the balance 2.5% is recognized as income when the contract is completed.
- (iii) Income from engineering services rendered is recognized at realizable value based on percentage of work completed.
- (iv) Income from supply/erection of non-BHEL equipment/systems and civil works is recognized based on dispatches to customer/work done at project site.

## 11 Accounting for Foreign Currency Transactions

Transactions in foreign currencies are recorded at the exchange rates prevailing on the date of

the transaction. Foreign currency monetary assets and liabilities are translated at year end exchange rates. Exchange difference arising on settlement of transactions and translation of monetary items are recognized as income or expense in the year in which they arise.

## 12 Translation of Financial Statements of Integral Foreign Operations

- (i) Items of income and expenditure are translated at average rate except depreciation, which is converted at the rates adopted for the corresponding fixed assets.
- (ii) Monetary items are translated at the closing rate; non-monetary items carried at historical cost are translated at the rates in force on the date of the transaction; non-monetary items carried at fair value are translated at exchange rates that existed when the value were determined.
- (iii) All translation variances are taken to Statement of Profit and Loss .

## 13 Employee Benefits

Provident Fund and Employees' Family Pension Scheme contributions are accounted for on accrual basis. Liability for Earned Leave, Half Pay Leave, Gratuity, Travel claims on retirement and Post Retirement Medical Benefits are accounted for in accordance with actuarial valuation. Compensation under Voluntary Retirement Scheme is charged off in the year of incurrence on a pro-rata monthly basis.

## 14 Claims by/against the Company

- (i) Claims for liquidated damages against the Company are recognized in accounts based on management's assessment of the probable outcome with reference to the available information supplemented by experience of similar transactions.
- (ii) Claims for export incentives/duty drawbacks/ duty refunds and insurance claims etc. are taken into account on accrual.
- (iii) Amounts due in respect of price escalation claims and/or variations in contract work are recognized as revenue only when there are conditions in the contracts for such claims or variations and/or evidence of the acceptability of the same from customer. However, escalation is restricted to intrinsic value.

## 15 Provision for Warranties

### (i) For construction contracts entered into on or after 01.04.2003:

The company provides warranty cost at 2.5% of the revenue progressively as and when it recognises the revenue and maintain the same through the warranty period.

### (ii) For all other contracts:

Provision for contractual obligations in respect of contracts under warranty at the year end is maintained at 2.5% of the value of contract. In the case of contracts for supply of more than a single product 2.5% of the value of each completed product is provided.

### (iii) Warranty claims/ expenses on rectification work are accounted for against natural heads as and when incurred and charged to provisions in the year end.

## 16 Government Grants

Government Grants are accounted when there is reasonable certainty of their realisation.

Grants related to fixed depreciable assets are adjusted against the gross cost of the relevant assets while those related to non-depreciable assets are credited to capital reserve. Grants related to revenue, unless received as compensation for expenses/losses, are recognized as revenue over the period to which these are related on the principle of matching costs to revenue.

Grants in the form of non-monetary assets are accounted for at the acquisition cost, or at nominal value if received free.

## 17 Taxes on income

Current tax is determined on the basis of taxable income in accordance with the provisions of the Income Tax Act, 1961. Deferred tax liability/ asset resulting from timing difference between accounting income and taxable income is recognized considering the tax rate and laws that have been enacted or substantively enacted as on the balance sheet date. Deferred tax asset is accounted for and carried forward only to the extent that there is reasonable certainty that sufficient future taxable income will be available against which such deferred tax assets can be realised. Deferred tax assets in respect of unabsorbed depreciation and carry forward

of losses are recognized only if there is virtual certainty that there will be sufficient future taxable income available to realise such assets.

## 18 Impairment

The carrying amount of cash generating units is reviewed at each balance sheet date where there is any indication of impairment . An impairment loss is recognized in the statement of profit and loss where the carrying amount exceeds the recoverable amount of the cash generating units. An impairment loss is reversed if there is change

in the recoverable amount and such loss either no longer exists or has decreased.

## 19 Segment Reporting

Segment reporting is in line with the accounting policies of the company. Revenue and expenses are identified to segments on the basis of their relationship to the operating activities of the segment. Revenue ,expenses, assets and liabilities which are not allocable to segments on a reasonable basis, are included under "Unallocated revenue/expenses/assets/ liabilities".



## 31 - Other Notes on Financial Statements

S. No.	Description		2015-16	2014-15
1	Capital & other commitments			
a)	Estimated amount of contracts, net of advances, remaining to be executed on capital account and not provided for	₹ in Crore	251.08	294.25
	The above includes for acquisition of intangible assets	₹ in Crore	0.82	8.00
b)	Investment in the Joint Venture entities for which the company has restrictions for their disposal for five years from the date of incorporation /commercial operation of the project/first unit of the project/completion of first EPC contract , as the case may be	₹ in Crore	639.32	381.52
c)	Commitments towards additional investment in the JV in case of inability of other JV partner to take up additional equity stake	₹ in Crore	111.26	292.50
d)	In view of the nature of business being long term construction contracts there may be other commitments for purchase of material etc. which has been considered as normal business process hence not been disclosed			
2	Land and buildings includes			
a) (i)	Acres of land for which formal transfer/ lease deed have not been executed	Acres	8933.27	8939.61
	Net Block of above	₹ in Crore	72.62	74.20
(ii)	Number of flats for which formal transfer/ lease deed have not been executed	Nos.	12	12
	Net Block of above	₹ in Crore	1.33	1.37
(iii)	including for acres of land for which the cost paid is provisional; registration charges and stamp duty (net of provision already made), if any, would be accounted for on payment.	Acres	528.18	528.18
	Net Block of above	₹ in Crore	67.09	67.81
b)	Acres of land leased to Ministry of Defence,Govt. of India Departments & others	Acres	30.60	30.60
c)	Acres of land being used by Ministry of Defence and for which further approval of the competent authority for continuance of licencing of this land is awaited.	Acres	180.00	180.00
d)	Acres of land under adverse possession/encroachment.	Acres	811.72	586.05
e)	1242.71 acres (P.Y. 1242.71 acres) of land pending mutation at Haridwar			
	(It includes land measuring 878.85 acres which is in BHEL's possession but has been wrongly got mutated by SIDCUL in favour of Uttarakhand Government against which action is in progress for restoration of BHEL's name in Revenue Records) (Cost of land of 2(b),( c ) , (d) & (e) above mentioned is not material)			
3	The impact on the profit of providing 100 percent depreciation on fixed assets upto ₹10,000/- each, without considering such impact of earlier years, is as under :			

	100% depreciation on assets upto ₹10,000/- charged off in the accounting year.	₹ in Crore	<b>8.48</b>	8.26
	Normal depreciation on above.	₹ in Crore	<b>2.46</b>	1.42
	Excess amount charged.	₹ in Crore	<b>6.02</b>	6.84
<b>4</b>	<b>Revenue from Operations</b>			
i)	a) Includes based on provisional prices	₹ in Crore	<b>47.20</b>	56.23
	b) Includes additional claim for despatches made in earlier year in accordance with price settlement with railways during the year.	₹ in Crore	<b>204.05</b>	0.00
	c) includes for escalation claims raised in accordance with sales contracts, inclusive of escalation claims on accrual basis, to the extent latest indices were available;	₹ in Crore	<b>1051.47</b>	1232.54
	d) includes despatches of equipment held on behalf of customers at their request for which payment has been received by Company ; and	₹ in Crore	<b>0.00</b>	17.10
	e) excludes for price reduction (net of refund) due to delay in delivery as per the terms of the contract .	₹ in Crore	<b>32.20</b>	45.43
ii)	Terminal excise duty refund on deemed export contracts is accounted on dispatch of goods. Export subsidy/duty drawback claims on lodgement of claims and Insurance claims based on acceptance.			
<b>5</b>	<b>Contingent liabilities :</b>			
	Claims against the company not acknowledged as debt :			
i)	a) Income Tax Pending Appeals	₹ in Crore	<b>0.96</b>	16.50
	b) Against which paid under protest included under the head "Deposits "	₹ in Crore	<b>0.00</b>	0.70
ii)	a) Sales Tax Demand	₹ in Crore	<b>1229.44</b>	1519.28
	b) Against which paid under protest included under the head "Deposits"	₹ in Crore	<b>269.29</b>	267.66
iii)	a) Excise Duty demands	₹ in Crore	<b>467.96</b>	530.85
	b) Against which paid under protest included under the head "Deposits"	₹ in Crore	<b>23.59</b>	23.40
iv)	a) Custom Duty demands	₹ in Crore	<b>0.10</b>	2.93
	b) Against which paid under protest included under the head "Deposits"	₹ in Crore	<b>0.00</b>	2.83
v)	Court & Arbitration cases	₹ in Crore	<b>1029.32</b>	862.72
vi)	a) Liquidated Damages	₹ in Crore	<b>7836.38</b>	4107.19
	b) Amount deducted by customers towards LD included in vi)a	₹ in Crore	<b>3161.77</b>	2405.13
vii)	Counter Claim by contractors	₹ in Crore	<b>0.61</b>	0.61
viii)	a) Service Tax Demand	₹ in Crore	<b>485.94</b>	458.95
	b) Against which paid under protest	₹ in Crore	<b>7.34</b>	4.36
ix)	Others	₹ in Crore	<b>45.86</b>	102.23

(In view of the various court cases, litigations and claims disputed by the company, the outflow of resources is not ascertainable at this stage).

- 6 a) Cash credit limit from banks aggregating to ₹ 5000 crore (previous year ₹ 5000 crore) and Company's counter guarantee / indemnity obligations in regard to bank guarantee / letters of credit limit aggregating to ₹ 55000 Crore (previous year ₹ 55000 Crore) sanctioned by the consortium banks are secured by first charge by way of hypothecation of raw materials, components, work in progress, finished goods, stores, trade receivables and other current assets both present and future. The outstanding bank guarantees as at 31.03.2016 is ₹ 45834 Crore (previous year ₹ 44915 Crore).
- b) Corporate Guarantees outstanding as on 31.03.2016 is ₹ 3028.33 Crore (Previous year ₹ 2752.27 Crore).
- 7 Other payable/ liabilities include a sum of ₹ 100.51 Crore (previous year ₹ 100.51 Crore) towards guarantee fee demanded by the Government of India in respect of foreign currency loans taken by the Company at the instance of the Government upto 1990-91. The matter for its waiver has been taken up with the Government since there was no stipulation for payment of such guarantee fee at the time the loans (guaranteed by Government) were taken by the company. The Company vide letter dated 09.02.2015 has again requested Department of Heavy Industries (DHI) for waiver of the guarantee fee.
- 8 Amorphous Silicon Solar Cell Plant (ASSCP), Gurgaon was taken on April 1, 1999 from Ministry of New and Renewable Energy (MNRE) on lease for a period of 30 years The formal lease agreement with the Ministry of New and Renewable Energy (MNRE) is yet to be finalised.
- 9 Balances shown under Trade Receivables, Long term Trade receivable, Trade payables, contractors advances, deposits and stock/ materials lying with sub-contractors/ fabricators are subject to confirmation, reconciliation & consequential adjustment, if any. As the Company is in the business of long term construction contracts, bills are raised on the customers as per contract by the units located at various places as per the approved billing schedule by the customer and the reconciliation is carried out on ongoing basis & provisions made, wherever considered necessary. Final reconciliation with customer is being done on completion of project (Trial Operation and/ or PG Test completed). The total receivables (including long term) are ₹ 42886 crs (including deferred debts & other debts of ₹ 20750 crs presently not due for payment and ₹ 6002 crs outstanding in respect of completed projects), out of which, the projects reconciled with customers have outstanding debts of ₹ 3998 crs in respect of completed projects.
- 10 The disclosure relating to Micro and Small Enterprises
- |   | 2015-16 | 2014-15 |
|---|---------|---------|
| i) The principal amount remaining unpaid to any supplier at the end of each accounting year ₹ in Crore  | 192.53  | 201.86  |
| ii) The interest due thereon remaining unpaid to any supplier at the end of each accounting year. ₹ in Crore  | 0.25    | 0.07    |
| iii) The amount of interest paid in terms of section 16, along with the amounts of the payment made to the supplier beyond the appointed day during each accounting year. ₹ in Crore  | 0.00    | 0.09    |
| iv) Total amount of interest due and payable for the period of delay in making payment (which have been paid but beyond the appointed day during the year) but without adding interest specified under this Act. ₹ in Crore                                 | 1.52    | 0.15    |
| v) Total amount of interest accrued and remaining unpaid at the end of each accounting year. ₹ in Crore   | 0.14    | 0.16    |
| vi) The amount of further interest remaining due and payable even in the succeeding years, until such date when the interest dues above are actually paid to the small enterprises, for the purpose of disallowance as a deductible expenditure. ₹ in Crore | 2.29    | 0.15    |

- 11 a) The disclosures relating to Construction Contracts entered on or after 01.04.2003 as per the requirement of Accounting Standard -7 (Revised) (AS-7R) Construction Contracts are as follows:  
(₹ in Crore)

		2015-16	2014-15
Contract revenue recognised for the year	₹ in Crore	19991.20	24136.35
In respect of Contract in progress at the end of year :			
The aggregate amount of Cost incurred and recognised profits (less recognised losses)	₹ in Crore	278499.43	259994.13
Amount of advance received	₹ in Crore	5883.04	6779.67
Amount of retentions (deferred debts)	₹ in Crore	20185.00	18137.26
In respect of dues from customers after appropriate netting off			
Gross amount due from customer for the contract work as an asset	₹ in Crore	3694.36	4419.12
Gross amount due to customer for the contract work as a liability	₹ in Crore	1572.04	1590.01
Contingencies		-	-

- b) The estimates of total costs and total revenue in respect of construction contracts entered on or after 1st April 2003 in accordance with AS-7R Construction Contracts are reviewed and up dated periodically to ascertain the percentage completion for revenue recognition. However, it is impracticable to quantify the impact of change in estimates.

- 12 The details of Research & Development Expenditure incurred during the year which is eligible (other than land or building) of deduction under section 35 (2AB) of the Income Tax Act. 1961.

A. Capital Expenditure on R&D		2015-16	2014-15
(i) Land	₹ in Crore	0.00	0.00
(ii) Building	₹ in Crore	0.08	0.02
B. Plant & Machinery & Other Equipment	₹ in Crore	13.56	41.41
C. Revenue Expenditure			
Salaries & Wages	₹ in Crore	133.34	141.93
Material/ Consumables/spares	₹ in Crore	16.40	30.85
Utilities	₹ in Crore	0.75	0.00
Other R&D related expenses	₹ in Crore	33.01	38.70
Total Revenue Expenditure	₹ in Crore	183.50	211.48
D. Any Receipts/ Income by the R&D Centre	₹ in Crore	3.92	1.19
Net amount eligible for deduction (B+C-D)	₹ in Crore	193.14	251.70

- 13 The disclosure relating to derivative instruments:

- a) The derivative instruments that are hedged and outstanding as on 31.03.2016 is Nil (previous year Nil).  
b) The foreign currency exposures that are not hedged by a derivative instrument or otherwise are as under :

a) Assets / Receivables		2015-16	2014-15
In foreign currency			
in US \$	in Crore	49.60	58.48
in EURO	in Crore	58.22	56.24
in Libya Dinar ( LYD)	in Crore	0.81	0.81



	in Riyal Oman ( RO)	in Crore	<b>0.03</b>	0.03
	<b>In Indian currency</b>			
	in US \$	₹ in Crore	<b>3271.40</b>	3409.21
	in EURO	₹ in Crore	<b>4328.80</b>	3794.70
	in LYD	₹ in Crore	<b>38.74</b>	36.72
	in RO	₹ in Crore	<b>5.25</b>	4.96
	in Others	₹ in Crore	<b>179.83</b>	49.93
	<b>b) Liabilities</b>			
	<b>in foreign currency</b>			
	in US \$	in Crore	<b>25.81</b>	30.79
	in EURO	in Crore	<b>18.22</b>	20.28
	in LYD	in Crore	<b>1.36</b>	1.38
	<b>In Indian currency</b>			
	in US \$	₹ in Crore	<b>1715.84</b>	1940.23
	in EURO	₹ in Crore	<b>1371.63</b>	1381.30
	in LYD	₹ in Crore	<b>65.74</b>	69.92
	in Others	₹ in Crore	<b>121.98</b>	72.17
				(₹ in Crore)
<b>14</b>	Remuneration paid/payable to Directors (including Chairman & Managing Director - CMD and CS) *		<b>2015-16</b>	<b>2014-15</b>
	Salaries & Allowances		<b>3.15</b>	1.70
	Contribution to PF		<b>0.13</b>	0.12
	Contribution to Gratuity Fund		<b>0.53</b>	0.05
	Others		<b>0.36</b>	0.17
	* The above amount include leave encashment on payment basis & excludes group insurance premium.			
	The CMD and functional directors have been allowed the use of staff car for both duty and non-duty journeys. The ceiling of non duty journey is 1000 kms p.m against recovery of prescribed amount in accordance with terms and condition of appointment. The monetary value of the perquisite for the use of car, if calculated in accordance with the provisions of I.T. Rules 1962 would amount to ₹ 0.02 Crore (Previous Year ₹ 0.02 Crore)			
				(₹ in Crore)
<b>15</b>	a) Expenditure on departmental Repair & maintenance which are as under:		<b>2015-16</b>	<b>2014-15</b>
	Plant & Machinery		<b>218.52</b>	234.01
	Buildings		<b>56.40</b>	55.29
	Others		<b>37.61</b>	43.39
	b) Agency Commission on exports included in expenses in connection with exports		<b>8.21</b>	18.53
	c) Expenditure on research & development		<b>270.63</b>	300.76

d)	Rent Residential	54.77	53.10
e)	Payment to Auditors (Net of service tax)		
	As Auditors	0.65	0.63
	includes paid abroad	0.03	0.07
	Reimbursement of expenses	0.12	0.14
	Taxation matters(including certification)	0.14	0.26
	includes paid abroad	0.00	0.11
	Other services	0.35	0.42
f)	Payment to Cost Auditors	0.12	0.05
g)	Expenditure on entertainment	5.67	6.07
h)	Expenditure on foreign travel		
	No. of tours	390	513
	Expenditure in Rupees	8.75	11.79
i)	Expenditure on Publicity and Public relations		
	Salaries allowances & other benefits	11.83	10.76
	Other expenses	9.67	10.11
j)	Director's Fees	0.16	0.05

**16** The disclosure relating to AS-15 (R) – Employee Benefits

**a) Gratuity Plan**

The gratuity liability arises on account of future payments, which are required to be made in the event of retirement, death in service or withdrawal. The liability has been assessed using projected unit credit actuarial method.

Reconciliation of opening and closing balances of the present value of the defined benefit obligation as at the year ended are as follows:

	(₹ in Crore)	
	2015-16	2014-15
1 Change in present value of obligation		
a) Present value of obligation as at the beginning	1909.03	1904.28
b) Acquisition adjustment	-	-
c) Interest Cost	152.72	161.86
d) Past service cost	-	-
e) Current service cost	111.44	97.18
f) Curtailment cost / (Credit)	-	-
g) Settlement cost / (Credit)	-	-
h) Benefits paid	-249.37	-246.42
i) Actuarial (gain) / Loss	15.64	(7.87)
j) Present value of obligation at the end of the period	1939.47	1909.03
2 Change in the fair value of plan assets		
a) Fair value of plan assets at the beginning	1909.03	1904.28
b) Acquisition Adjustments		

c)	Expected return on plan assets	<b>162.27</b>	161.86
d)	Contributions		
e)	Benefits paid	<b>-249.37</b>	-246.42
f)	Actuarial gain / (Loss) on plan assets	<b>-10.67</b>	-2.57
g)	Fair value of plan assets as at the end of the year	<b>1811.27</b>	1817.15
3	Fair value of plan assets		
a)	Fair value of plan assets at the beginning	<b>1909.03</b>	1904.28
b)	Acquisition Adjustments		
c)	Actual return on plan assets	<b>151.60</b>	159.30
d)	Contributions		
e)	Benefits paid	<b>-249.37</b>	-246.42
f)	Fair value of plan assets at the year end	<b>1811.27</b>	1817.15
g)	Funded status	<b>-128.21</b>	-91.88
h)	Excess of actual over estimated return of plan assets	<b>-10.67</b>	-2.57
4	Actuarial gain / loss recognised		
a)	Actuarial gain / (loss) for the period - obligation	<b>-15.64</b>	7.87
b)	Actuarial (Gain) / loss for the period – plan assets	<b>10.67</b>	2.57
c)	Total (gain) / loss for the period	<b>26.31</b>	-5.30
d)	Actuarial (gain)/ loss recognized in the period	<b>26.31</b>	-5.30
e)	Unrecognized actuarial (gains)/ losses at the end of the period		-
5	The amount recognised in balance sheet and statement of profit and loss		
a)	Present value of obligation as at end of the period	<b>1939.47</b>	1909.03
b)	Fair value of plan assets as at the end of period	<b>1811.27</b>	1817.15
c)	Funded status	<b>-128.21</b>	-91.88
d)	Excess of actual over estimated	<b>-10.67</b>	-2.57
e)	Unrecognised actuarial (gains)/ losses	-	-
f)	Net asset/ (liability) recognized in balance sheet	<b>-128.21</b>	-91.88
6	Expense recognised in the statement of profit and loss		
a)	Current service cost	<b>111.44</b>	97.18
b)	Past service cost	-	-
c)	Interest cost	<b>152.72</b>	161.86
d)	Expected return on plan assets	<b>-162.27</b>	-161.86
e)	Curtailment cost / (Credit)	-	-
f)	Settlement cost / (credit)	-	-
g)	Net actuarial (gain) / loss recognized in the period	<b>26.31</b>	-5.30
h)	Adjustment for reversal of liability	<b>1.13</b>	2.44
i)	Expenses recognized in the statement of profit and loss	<b>127.08</b>	89.44

Assumptions- Discounting rate 8.00% (prev. year 8.00%), Future salary increase 8.25% for 1st four years & then 6% p.a. (prev. year 6.00%), Expected rate of return on plan assets 8.50% (prev. year 8.50%).

**b) Post Retirement Medical Benefits Plan**

(₹ in Crore)

	2015-16	2014-15
1 Change in present value of obligation		
a) Present value of obligation as at the beginning	1530.44	1360.44
b) Acquisition adjustment	-	-
c) Interest Cost	122.44	115.64
d) Past service cost	-	-
e) Current service cost	27.47	26.37
f) Curtailment cost / (Credit)	-	-
g) Settlement cost / (Credit)	-	-
h) Benefits paid	-83.92	-78.35
i) Actuarial (gain) / Loss	82.94	106.34
j) Present value of obligation as at the end of year	1679.37	1530.44
2 Change in the fair value of plan assets	-	-
3 Fair value of plan assets	-	-
Funded Status	-1679.37	-1530.44
4 Actuarial gain / loss recognised		
a) Actuarial gain / (loss) for the period - obligation	-82.94	-106.34
b) Actuarial (Gain) / loss for the period – plan assets	-	-
c) Total (gain) / loss for the year	82.94	106.34
d) Actuarial (gain)/ loss recognized in the period	82.94	106.34
e) Unrecognized actuarial (gains)/ losses at the end of the period	-	-
5 The amount recognized in balance sheet and statement of profit and loss		
a) Present value of obligation as at the end of the year	1679.37	1530.44
b) Fair value of plan assets as at the end of the year	-	-
c) Funded status	-1679.37	-1530.44
d) Net assets / (liability) recognized in balance sheet	-1679.37	-1530.44
6 Expenses recognised in the statement of profit and loss		
a) Current service cost	27.47	26.37
b) Interest cost	122.44	115.64
c) Net actuarial (gain) / loss recognized in the year	82.94	106.34
d) Expenses recognized in the statement of profit and loss	232.85	248.35



**c) Long Term Leave Liability (EL/HPL)**

The company provides for earned leave benefit and half pay leave to the employees of the company which accrue half yearly at 15 days (maximum) and 10 days respectively. The earned leave is encashable while in service and upto a maximum of 300 days on retirement. Half pay leave is encashable within 3 months prior to superannuation or on separation beyond the age of 50 years subject to the overall ceiling of 480 days .The leave liability has been treated as other long term benefits and has been assessed using projected unit credit actuarial method.

(₹ in Crore)

	2015-16	2014-15
1 Change in present value of obligation		
a) Present value of obligation as at the beginning	1479.87	1328.62
b) Acquisition adjustment	-	-
c) Interest Cost	118.39	112.93
d) Past service cost	-	-
e) Current service cost	60.35	51.74
f) Curtailment cost / (Credit)	-	-
g) Settlement cost / (Credit)	-	-
h) Benefits paid	-292.94	-242.00
i) Actuarial (gain) / Loss	263.07	228.58
j) Present value of obligation at the end of the period	1628.73	1479.87
2 Change in the fair value of plan assets	-	-
a) Fair value of plan assets at the beginning	-	-
b) Acquisition Adjustments	-	-
c) Expected return on plan assets	-	-
d) Contributions	-	-
e) Benefits paid	-	-
f) Actuarial gain / (Loss) on plan assets	-	-
g) Fair value of plan assets as at the end of the year	-	-
3 Fair value of plan assets		
a) Fair value of plan assets at the beginning	-	-
b) Acquisition Adjustments	-	-
c) Actual return on plan assets	-	-
d) Contributions	-	-
e) Benefits paid	-	-
f) Fair value of plan assets at the year end	-	-
g) Funded status	-1628.73	-1479.87
h) Excess of actual over estimated return of plan assets	-	-

4	Actuarial gain / loss recognised		
a)	Actuarial gain / (loss) for the period - obligation	-263.07	-228.57
b)	Actuarial (Gain) / loss for the period – plan assets	-	-
c)	Total (gain) / loss for the period	263.07	228.57
d)	Actuarial (gain)/ loss recognized in the period	263.07	228.57
e)	Unrecognized actuarial (gains)/ losses at the end of the period	-	-
5	The amount recognised in balance sheet and statement of profit and loss		
a)	Present value of obligation as at end of the period	1628.73	1479.87
b)	Fair value of plan assets as at the end of period	-	-
c)	Funded status	-1628.73	-1479.87
d)	Excess of actual over estimated	-	-
e)	Unrecognised actuarial (gains)/ losses	-	-
f)	Net asset/ (liability) recognized in balance sheet	-1628.73	-1479.87
6	Expense recognised in the statement of profit and loss		
a)	Current service cost	60.35	51.74
b)	Past service cost	-	-
c)	Interest cost	118.39	112.93
d)	Expected return on plan assets	-	-
e)	Curtailment cost / (Credit)	-	-
f)	Settlement cost / (credit)	-	-
g)	Net actuarial (gain) / loss recognized in the period	263.07	228.57
h)	Expenses recognized in the statement of profit and loss	441.80	393.24
d)	The company has got the actuarial valuation of provident fund done in respect of PF trusts of the units/regions. As per the actuarial valuation certificate liability for likely interest shortfall, to be compensated by the company to the PF trust, has been provided in the accounts.		
	Provision made (withdrawal) for shortfall in PF interest liability ₹ in Crore based on actuarial valuation for the year	-3.69	-3.54
	Accumulated provision for shortfall in PF interest liability based ₹ in Crore on actuarial valuation	11.26	14.95

## 17 Related Party Transactions:

### i) Related Parties where control exists (Joint Ventures):

Powerplant Performance Improvement Ltd.

BHEL-GE Gas Turbine Services Pvt. Ltd.

NTPC-BHEL Power Projects Pvt. Ltd.

Latur Power company Ltd.

Raichur Power Corporation Ltd.

Dada Dhuniwale Khandwa Power Ltd.

- ii) Other related parties (Key Management Personnel- Functional Directors: existing & retired and Company Secretary):

CMD : Shri Atul Sobti (w.e.f. 01.01.2016) , Shri B.P.Rao (upto 31.12.2015) Functional Directors : S/Shri P. K. Bajpai (upto 31.05.2015) , R Krishnan (upto 31.07.2015) , W V K krishnashankar (upto 31.08.2015), T.N.Veeraraghavan (upto 30.06.2015), D. Bandyopadhyay (w.e.f. 01.08.2015), Amitabh Mathur (w.e.f. 01.09.2015), S. Biswas (w.e.f. 24.09.2015), T. Chockalingam (w.e.f. 11.02.2016) & Company Secretary : Shri IP Singh

- iii) Details of Transactions

Joint Ventures-- BGGTS		2015-16	2014-15
Purchase of Goods and Services	₹ in Crore	0.85	1.69
Sales of Goods and services	₹ in Crore	150.02	135.63
Receiving of Services	₹ in Crore	-	-
Rendering of Services	₹ in Crore	1.09	0.03
Dividend income	₹ in Crore	21.18	16.90
Royalty income	₹ in Crore	-	1.02
Amounts due to BHEL at the end of the year	₹ in Crore	43.34	65.31
Amounts due from BHEL (incl. advances) at the end of the year	₹ in Crore	0.41	1.38
Provision for Doubtful debts	₹ in Crore	0.28	-
Key Management Personnel (KMP)			
Payment of Salaries	₹ in Crore	4.20	2.31
Sale of Fixed Assets	₹ in Crore	0.01	0.00
Relatives of KMP			
Amounts due to BHEL at the end of the year	₹ in Crore	0.01	0.01
Payment of Salaries	₹ in Crore	0.20	0.26

## 18 Lease

Details of assets taken on lease on or after 1st April 2001 are as under:

- i) Finance Lease

a.	Outstanding balance of Minimum Lease payments		2015-16	2014-15
	not later than one year	₹ in Crore	95.91	68.70
	later than one year and not later than five years	₹ in Crore	164.47	69.21
	later than five years	₹ in Crore	0.00	0.12
	Total minimum lease payments at the balance sheet date	₹ in Crore	260.38	138.03
b.	Present Value of (a) above			
	not later than one year	₹ in Crore	76.15	56.82
	later than one year and not later than five years	₹ in Crore	126.29	60.89
	later than five years	₹ in Crore	0.00	0.11

	Total of Present Value at the balance sheet date	₹ in Crore	<b>202.44</b>	117.82
c.1	Finance charges	₹ in Crore	<b>57.94</b>	20.21
c.2	Present value of Residual value, if any	₹ in Crore	<b>0.00</b>	0.00
ii)	The company is in the practice of taking houses for employees, office buildings and EDP equipment etc. on operating lease both as cancellable and non-cancellable.			
iii)	Operating Lease		<b>2015-16</b>	<b>2014-15</b>
	The future minimum lease payments under non-cancellable operating lease are as under			
	not later than one year	₹ in Crore	<b>1.02</b>	1.28
	later than one year and not later than five years	₹ in Crore	<b>1.48</b>	2.02
	later than five years	₹ in Crore	<b>1.11</b>	2.18
iv)	Details regarding rentals in respect of assets taken on lease prior to 1.4.2001 are as given below:			
	Cost of Assets		<b>2015-16</b>	2014-15
	Land & Buildings	₹ in Crore	<b>0.01</b>	0.01
	Rentals payable over unexpired period of lease			
	Land & buildings	₹ in Crore	<b>0.02</b>	0.02

<b>19 Earnings per Share:</b>		<b>2015-16</b>	<b>2014-15</b>
Weighted average number of Equity Shares outstanding during the year (A)	Nos. in Crore	<b>244.76</b>	244.76
Face Value of Equity Share	₹	<b>2.00</b>	2.00
Net Profit for the year (B)	₹ in Crore	<b>-913.42</b>	1419.29
Basic and Diluted Earnings Per Share (B)/(A)	₹	<b>-3.73</b>	5.80

## 20 Joint Ventures

Pursuant to compliance of Accounting Standard-27 issued by the Institute of Chartered Accountants of India, relevant disclosures relating to Joint ventures are as follows:

		<b>2015-16</b>	<b>2014-15</b>
a)	Names of Joint Ventures	Country of Incorporation	Proportion of Ownership
	Power Plant Performance Improvement Ltd.	India	One share less than 50%
	BHEL-GE Gas Turbine Services Pvt. Ltd.	India	One share less than 50%
	NTPC-BHEL Power Projects Pvt. Ltd.	India	50%
	Latur Power Company Ltd. (Under liquidation)	India	NIL
	Raichur Power Corporation Ltd.	India	27.34%
	Dada Dhuniwale Khandwa Power Ltd.	India	50%

- b) The provision for diminution in value of investment in Power plant Performance Improvement Ltd has been made since the company is under liquidation and the amount paid as equity is not recoverable.
- c) Aggregate amount of company's interest in Joint Ventures as per accounts is as under:

**BHEL-GE Gas Turbine Services Pvt. Ltd.** (₹ in Crore)

	2015-16	2014-15
Non current asset	16.00	10.89
Net Current Assets	105.90	99.24
Non current liabilities	5.79	2.66
Deferred Tax Assets (net)	4.20	3.50
Shareholders Funds	120.30	110.96
Income	290.62	303.64
Expenses	245.04	251.43
Contingent Liabilities	2.53	2.53
Capital Commitments	0.01	0.22

*Figures of 2015-16 are based on audited financial results*

**NTPC-BHEL Power Project Pvt. Ltd.** (₹ in Crore)

	2015-16	2014-15
Non current asset	122.32	92.73
Net Current Assets	-70.47	-21.19
Non current liabilities	11.89	7.91
Deferred Tax Assets (net)	3.42	2.71
Shareholders Funds	43.39	66.32
Income	401.36	296.26
Expenses	425.00	295.68
Contingent Liabilities	1.73	35.02
Capital Commitments	2.08	4.82

*Figures of 2015-16 are based on provisional unaudited financial results*

**Raichur Power Corporation Ltd.** (₹ in Crore)

	2015-16	2014-15
Non current asset	2935.41	2158.63
Net Current Assets	-41.57	-160.70
Non current liabilities	2304.53	1666.41
Deferred Tax Assets (net)	0.00	0.00
Shareholders Funds	589.32	331.52



Income	<b>0.12</b>	0.17
Expenses	<b>252.79</b>	172.50
Contingent Liabilities	<b>1274.76</b>	104.17

*Figures of 2015-16 are based on provisional unaudited financial results*

	(₹ in Crore)	
<b>Dada Dhuniwale Khandwa Power Ltd.</b>	<b>2015-16</b>	<b>2014-15</b>
Non current asset	<b>4.90</b>	8.14
Net Current Assets	<b>18.09</b>	14.86
Non current liabilities	<b>0.12</b>	0.12
Deferred Tax Assets (net)	<b>0.00</b>	0.00
Shareholders Funds	<b>22.88</b>	22.88
Income	<b>0.00</b>	0.01
Expenses	<b>0.00</b>	0.00
Contingent Liabilities	<b>0.93</b>	0.00

*Figures of 2015-16 are based on provisional unaudited financial results*

- 21 As per the listing agreement with the Stock Exchanges, the requisite details of loans and advances in the nature of loans, given by the Company are given below:

- i) In respect of Subsidiary Company: (₹ in Crore)

BHEL Electrical Machines Ltd.	<b>2015-16</b>	<b>2014-15</b>
Loans and advances in the nature of loans outstanding	<b>3.00</b>	0.00
Maximum amount of loans and advances in the nature of loans outstanding during the year	<b>3.00</b>	0.00

- ii) No loans have been given (other than loans to employees), wherein there is no repayment schedule or repayment is beyond seven years; and
- iii) There are no loans and advances in the nature of loans, to firms/companies, in which directors are interested.

- 22 CSR EXPENDITURE (₹ in Crore)

(a) Gross amount required to be spent by the Company during the year **110.10**

(b) Amount spent during the year on:

	In Cash	Yet to be paid in cash	Total
i) Construction/acquisition of any asset	0.00	<b>0.00</b>	0.00
ii) On purposes other than (i) above	56.47	<b>53.63</b>	110.10

(₹ in Crore)

		2015-16	2014-15
23	<b>a) Liquidated Damages</b>		
	Opening	2225.03	1728.77
	Additions	1025.14	734.68
	Usage/ Write off/payment	-6.58	-31.24
	Withdrawal/adjustments	-240.06	-207.18
	Closing Balance	3003.53	2225.03
	<b>Contractual Obligation</b>		
	Opening	6109.15	5636.81
	Additions	733.50	1041.63
	Usage/ Write off/payment	-173.61	-239.28
	Withdrawal/adjustments	-515.54	-330.01
	Closing Balance	6153.50	6109.15

b) Liquidated damages are provided in line with the Accounting Policy of the Company and the same is dealt suitably in the accounts on settlement or otherwise. Contingent liability relating to liquidated damages is shown in item No. 5 of Note No. 31

c) The provision for contractual obligation is made at the rate of 2.5% of the contract revenue in line with significant Accounting Policy No.15 to meet the warranty obligations as per the terms and conditions of the contract. The same is retained till the completion of the warranty obligations of the contract. The actual expenses on warranty obligation may vary from contract to contract and on year to year depending upon the terms and conditions of the respective contract.

24 Assets and Liabilities are classified between Current and Non-current considering 12 months period as operating Cycle.

25 Item of expense and income less than ₹ one Lakh are not considered for booking under Prior Period Items.

26 There are net outstanding debts of ₹ 2139 crs (after adjustment of advances) pertaining to 31 projects on hold due to various reasons like environment clearance, fuel linkage, land acquisition, fund constraints, force majeure, hold imposed by BHEL due to strategic reasons etc. FG/ WIP of ₹ 967 crs is also lying in these projects. Provision of ₹ 1069 crs for outstanding debts and ₹ 120 crs for inventory has been made during the year for these projects in line with the guidelines formulated in this regard.

27 Previous year's figures have been regrouped/ rearranged wherever considered necessary.

## 28. Other Information

### a. Sales, Opening Stocks & Closing Stocks

(₹ in Crore)

Product	Unit	Sales during the year 2015-2016		Op. Stock of Fin. Goods as on 01.04.2015		Cl. Stock of Fin. Goods as on 31.3.2016	
		Qty.	Value	Qty.	Value	Qty.	Value
<b>HEP, Bhopal</b>							
<b>SWITCHGEAR, CONTROLGEAR, RECTIFIER, CAPACITORS</b>							
Switchgear-11 kv to 220 kv high speed air blast circuit breakers	Nos.	3810	144.30	0	1.98	80	0.92
Control Panels	Nos.	(5157)	(95.30)	(101)	(11.42)	(0)	(1.98)
Industrial controlgear	Nos.	533	31.26	0	0.28	6	0.23
	Nos.	(244)	(90.54)	(12)	(2.42)	(0)	(0.28)
	Nos.		4.54	0	0.01	0	0.00
Traction controlgear for AC, DC & diesel system	Nos.	(0)	(2.28)	0	0.00	(0)	(0.01)
	Set	38	122.78	5	2.43	(0)	0.00
Rectifiers with Electronics	Set	(112)	(75.59)	(7)	(1.42)	(5)	(2.43)
	Nos.	640	64.15	2	0.31	27	0.11
Capacitors	Nos.	(556)	(64.89)	(3)	(0.27)	(2)	(0.31)
	MVAR	2315	18.79	278	1.76	427	3.33
Bushings	MVAR	(3374)	(25.91)	(382)	(2.43)	(278)	(1.76)
		0	20.98	0	0.93	0	0.41
		(0)	(15.25)	0	(0.70)	(0)	(0.93)
<b>TRANSFORMERS</b>							
Power transformers up to 400 kv	MVA	19821	750.97	3	21.82	2213	30.86
Instrument, welding, transformers and reactors	MVA	(11603)	(606.35)	(1398)	(68.93)	(3)	(21.82)
	MVA	468	12.69	163	1.68	189	4.98
	Nos.						
	MVA	(384)	(8.79)	(36)	(1.31)	(163)	(1.68)
	Nos.			0		0	
<b>INDUSTRIAL AND TRACTION MACHINES</b>							
Traction Motors for AC,DC & diesel system, main/auxiliary generators	Nos.	1558	503.25	35	4.02	63	8.52
Industrial machines, AC motors up to 1000 HP, DC motors & generators of all types	Nos.	(1978)	(431.84)	(135)	(9.89)	(35)	(4.02)
	Nos.	688	154.92	105	21.65	133	29.61
	Nos.	(686)	(127.66)	(63)	(11.88)	(105)	(21.65)
<b>HEAVY ROTATING PLANT &amp; TURBINES</b>							
Large electrical machines above 1000 HP	Nos.	176	204.71	16	11.25	31.00	33.81
Water wheel alternators & water turbines & Mini micro turbines & generators	Nos.	(187)	(275.99)	(16)	(12.82)	(16)	(11.25)
	Nos.	10	648.19	4	64.74	0	22.04
	MW	1740		680			
	Nos.	10	363.32	3	71.17	0	8.76
	MW	1740		510			
	Nos.	(2)	(549.26)	0	(33.03)	(4)	(64.74)
	MW	(32)	(0.00)			(680)	
	Nos.	(6)	(197.80)	0	(14.88)	(3)	(71.17)
	MW	(82)				(510)	
Turbo Alternators & Steam turbines	Set	5	494.46	0	12.55	0	20.83
Heat Exchangers	Set	(5)	(517.11)	0	(15.32)	0	(12.55)
Others	Nos.	26	236.68	0	8.11	0	12.29
	Nos.	(32)	(392.48)	(7)	(3.66)	0	(8.11)
		1248	71.28		4.96		0.00
		(2018)	(61.88)		0.00		(4.96)
<b>TOTAL</b>			<b>3847.26</b>		<b>229.65</b>		<b>176.72</b>

(₹ in Crore)

Product	Unit	Sales during the year 2015-2016		Op. Stock of Fin. Goods as on 01.04.2015		Cl. Stock of Fin. Goods as on 31.3.2016	
		Qty.	Value	Qty.	Value	Qty.	Value
TP, Jhansi							
Power transformers and	Nos.	109	355.50	3	13.32	0	0.00
special transformers	Nos.	(119)	(367.17)	0	0.00	(3)	(13.32)
ESP Transformer	Nos.	809	65.45	0	0.00	0	0.00
	Nos.	(955)	(100.01)	0	0.00	0	0.00
AC EMU Transformer	Nos.	0	15.74	0	0.00	0	0.00
	Nos.	(6)	(2.18)	0	0.00	0	0.00
Freight Loco transformers	Nos.	119	90.59	1	0.30	0	0.00
	Nos.	(132)	(79.20)	(10)	(4.85)	(1)	(0.30)
Instrument transformers	Nos.	352	13.69	0	0.00	0	0.00
	Nos.	(432)	(14.77)	0	0.00	0	0.00
Bus Duct	Nos./Set	0	(0.20)	0	0.00	0	0.00
	Nos./Set	(0)	(0.14)	0	0.00	0	0.00
Dry Type Transformer	Nos.	84	23.42	0	0.00	0	0.00
	Nos.	(110)	(39.64)	0	0.00	0	0.00
Diesel Shunters	Nos.	6	30.51	2	12.03	0	0.00
	Nos.	(12)	(49.74)	0	0.00	(2)	(12.03)
AC LOCO	Nos.						
	Nos.	(0)	(0.00)				
New Product Loco	Nos.			0	0.00	0	0.00
	Nos.	(0)	(0.00)				
Others/Misc.	Nos.	0	4.19	0	0.00	0	0.00
	Nos.	(0)	(40.02)	0	0.00	0	0.00
		TOTAL	598.90	25.64		0.00	
HEEP, Haridwar							
Electrical Machines	MW/ Nos.	0	0	1/2	0.12	1/2	0.10
	MW/ Nos.	(0)	(0.00)	(1/2)	(0.11)	(1/2)	(0.12)
Industrial controls panels	Nos.	0	0	3	0.00	3.00	0.00
	Nos.	(0)	(0.00)	(3.00)	0.00	(3.00)	(0.00)
Turbo Sets							
Turbine Modules	MW/ Nos.	4099/39	2435.56	908/17	285.16	812/15	274.97
	MW/ Nos.	(5520/42)		(1357/19)		(908/17)	
Turbogenerator modules	MW/ Nos.	7600/13		1415/5		1145/4	
	MW/ Nos.	(6161/10.5)	(2587.17)	(1711/5.5)	(313.05)	(1415/5)	(285.16)
Hydro sets	MW/ Nos.	0	0.16	0	0	0	0
	MW/ Nos.		(0.17)	0	0	0	0
Super Rapid Gun Mount	Nos.	1	43.97	0	0	0	0
	Nos.	(0.00)	(0.00)	0	0	0	0
Gas Turbine	MW/ Nos.	0	2.78	0	0	0	0
	MW/ Nos.		(213.70)	0	0	0	0
Others		0	776.93		37.37		40.69
			(736.32)	0	(36.78)	0	(37.37)
		TOTAL	3259.38	322.65		315.76	

(₹ in Crore)

Product	Unit	Sales during the year 2015-2016		Op. Stock of Fin. Goods as on 01.04.2015		Cl. Stock of Fin. Goods as on 31.3.2016	
		Qty.	Value	Qty.	Value	Qty.	Value
HPBP, Trichy							
Boilers	MT	305689	5248.80	48786	582.66	41196	561.90
	MT	(310796)	(6508.65)	(39042)	(445.06)	(48786.00)	(582.66)
Valves	Nos.	63129	716.34	13125	59.41	15243	62.80
	Nos.	(75053)	(790.05)	(17623)	(30.17)	(13125.00)	(59.41)
Income from testing & other services	₹		8.12				
	₹		(11.74)				
Seamless steel tubes	MT	245	4.44	624	9.49	85	1.52
	MT	(153)	(2.11)	(79)	(1.01)	(624.00)	(9.49)
		TOTAL	5977.69		651.56		626.23
BAP, Ranipet							
Boiler auxiliaries	MT	154941	1424.89	37888	307.08	33273.14	282.99
	MT	(149293)	(1541.13)	(47304)	(311.03)	(37888)	(307.08)
Income from testing & other services			3.59				
			(9.01)	0.00	0.00	0.00	0.00
Income from external erection & other services			4.00				
			(5.86)	0.00	0.00	0.00	0.00
		TOTAL	1432.48		307.08		282.99
HPEP, Hyderabad							
Utility Sets (60 MW)	Nos.	P	186.26	P	40.56	P	37.64
	Nos.	(7+P)	(507.86)	(P)	(30.65)	(P)	(40.56)
Small & Medium Sets	Nos.	5+P	156.39	1+P	15.45	1+P	6.53
	Nos.	(5+P)	(186.27)	(P)	(16.23)	(1+P)	(15.45)
Pumps and heaters	Nos.	107+P	778.56	11+P	34.58	4+P	16.89
	Nos.	(156+P)	(1041.96)	(P)	(23.72)	(11+P)	(34.58)
Compressors	Nos.	3+P	246.39	1+P	3.46	1+P	3.46
	Nos.	(2+P)	(168.05)	(P)	(7.71)	(1+P)	(3.46)
Gas Turbine	Nos.	2+P	368.86	P	9.50	P	9.50
	Nos.	(P)	(323.91)	0	(9.50)	P	(9.50)
Bowl Mills	Nos.	69+P	530.21	6+P	4.44	0	0.00
	Nos.	(79+P)	(577.78)	0	0	6+P	(4.44)
Heat Exchangers	Nos.	0	0.00				
	Nos.		(1.20)	0	0	0	0
Erection Income			38.19				
			(47.60)	0	0	0	0
Castings			(0.00)	0	0	0	0
Breakers	Nos.	1	6.79				
	Nos.	(3.00)	(6.82)	0	0	0	0
Oil Rigs	Nos.	p	133.56	0.00	0.00	0.00	0.00
	Nos.	(3+P)	(429.88)	0	0	0	0
Others (Services)			3.67				
		TOTAL	2445.21		107.99		74.02



(₹ in Crore)

Product	Unit	Sales during the year 2015-2016		Op. Stock of Fin. Goods as on 01.04.2015		Cl. Stock of Fin. Goods as on 31.3.2016	
		Qty.	Value	Qty.	Value	Qty.	Value
<b>ISG, Bengaluru</b>							
Other Services			816.85 (805.80)				
		<b>TOTAL</b>	<b>816.85</b>		<b>0.00</b>		<b>0.00</b>
<b>EDN, Bengaluru</b>							
Power devices	Nos.	832	0.82	2482	0.39	188.00	0.39
	Nos.	(6.00)	(0.03)	(125)	(0.14)	(2482)	(0.39)
Photovoltaics	kWs	58039	424.71	173	13.81	0.00	0.23
	kWs	(58933.00)	(339.37)	(55)	(0.27)	(173)	(13.81)
Control Equipment	Cubicles	3551	963.71	199	10.93	211.00	30.84
	Cubicles	(3516)	(1052.06)	(276)	(20.36)	(199)	(10.93)
		<b>TOTAL</b>	<b>1389.24</b>		<b>25.13</b>		<b>31.46</b>
<b>EPD, Bengaluru</b>							
Insulators & bushings	MT	6837	83.31	704	9.21	1354.06	15.44
	MT	(8318)	(109.73)	(661)	(7.17)	(704)	(9.21)
Ceralin	MT	2228	39.13	451	4.56	577.46	7.91
	MT	(2125)	(30.48)	(156)	(1.67)	(451)	(4.56)
Control Panel	Nos.		28.85		2.95		5.16
	Nos.		(76.28)	(56)	(1.31)		(2.95)
Income from testing & other services		0	0.33	0.00	0.00	0.00	0.00
		0	(0.33)	(0)	(0.00)	(0)	(0.00)
		<b>TOTAL</b>	<b>151.62</b>		<b>16.72</b>		<b>28.52</b>
<b>Power Group</b>							
Income from erection & Other services & spares			5408.88 (7112.61)		-5.59 (-7.05)		-53.75 (-5.59)
		<b>TOTAL</b>	<b>5408.88</b>		<b>(5.59)</b>		<b>(53.75)</b>
<b>IP, Jagdishpur</b>							
Insulators	CMT	4679.70	60.93	1024.46	14.27	1421.56	20.22
	CMT	(6569)	(84.19)	(1214.51)	(16.77)	(1024.46)	(14.27)
Ceralin	MT	1470.68	28.01	178.42	2.70	321.65	5.17
	MT	(3373)	(48.54)	(269)	(4.18)	(178.42)	(2.70)
		<b>TOTAL</b>	<b>88.94</b>		<b>16.97</b>		<b>25.39</b>
<b>IVP Goindwal</b>							
Industrial Valves	Nos	0	0.00	1633	9.17	2535	14.76
	Nos	0	0.00	(1220)	(5.80)	(1633)	(9.17)
Fuel Pipe Couping	Nos	0	0.00	0	0.00	0	0.00
	Nos	0	0.00	(84)	(0.04)	0.00	0.00
Wall Blowers	Nos	0	0.00	11	0.06	33	0.17
	Nos	0	0.00	0	0.00	(11)	(0.06)
Pipe Collar	Nos.	0	0.00	0	0.00	4	0.00
	Nos.	0	0.00	0	0.00	0	0.00
Threaed Piece	Nos.	0	0.00	0	0.00	80	0.00
	Nos.	0	0.00	0	0.00	0	0.00
		<b>TOTAL</b>	<b>0.00</b>		<b>9.23</b>		<b>14.93</b>
<b>CFP, Rudrapur</b>							
Busduct Project	Sets	40	137.24	18	15.41	9.00	12.14
	Sets	(35)	(127.04)	(24)	(10.21)	(18)	(15.41)
		<b>TOTAL</b>	<b>137.24</b>		<b>15.41</b>		<b>12.14</b>
<b>HERP, Varanasi</b>							
Spares & Repairs for Boiler/ Turbine & Auxiliaries			125.16 (231.34)		2.91 (1.49)		4.55 2.91
		<b>TOTAL</b>	<b>125.16</b>		<b>2.91</b>		<b>4.55</b>

(₹ in Crore)

Product	Unit	Sales during the year 2015-2016		Op. Stock of Fin. Goods as on 01.04.2015		Cl. Stock of Fin. Goods as on 31.3.2016	
		Qty.	Value	Qty.	Value	Qty.	Value
<b>Transmission Business Group</b>							
Spares (Including Services)			510.07 (557.08)		5.84 (8.66)		2.49 (5.84)
<b>TOTAL</b>			<b>510.07</b>		<b>5.84</b>		<b>2.49</b>
<b>EMRP, Mumbai</b>							
Repair & Project work			23.63 (33.91)		0.07 (0.07)		0.06 (0.07)
<b>TOTAL</b>			<b>23.63</b>		<b>0.07</b>		<b>0.06</b>
<b>FP, Jagdishpur</b>							
Fabricated Items	MT	6620	38.62		0.00		0.00
	MT	(2194)	(12.57)		0.00		0.00
<b>TOTAL</b>			<b>38.62</b>		<b>0.00</b>		<b>0.00</b>
<b>International Operations</b>							
Income from Sales (Revenue Recognition Adjustment)			20.54 (9.86)		-0.10 (-1.18)		(-0.10)
<b>TOTAL</b>			<b>20.54</b>		<b>-0.10</b>		<b>0.00</b>
<b>Industry Sector</b>							
Income from Sales (Revenue Recognition Adjustment)			-17.74 (41.06)		-2.11 (-1.44)		0.12 (-2.11)
<b>TOTAL</b>			<b>-17.74</b>		<b>-2.11</b>		<b>-0.12</b>
<b>PE&amp;SD</b>							
Industrial sets			1.21 (18.57)				
Gas Turbine			2.73 (48.03)				
Thermal sets			112.52 (114.50)				
Compressors			2.55 (0.41)				
<b>TOTAL</b>			<b>119.01</b>				
<b>RMSG</b>							
DG Sets & Erection services			134.44 (120.01)				
<b>TOTAL</b>			<b>134.44</b>				
<b>HPVP</b>							
Boilers	MT	996	28.54	675.53	14.05	14.26	26.41
	MT	(1475)	(30.64)	(438.00)	(9.90)	(675.53)	(14.05)
Cryogenics	MT	0	28.04				
	MT	(9.06)	(2.80)				
Others	MT	274	4.41				
	MT	(1.19)	(3.94)				
<b>TOTAL</b>			<b>60.99</b>		<b>14.05</b>		<b>26.41</b>
<b>CFFP, Haridwar</b>							
Steel Casting	MT	58.29	3.14	0.00	0.00	0.00	0.00
	MT	(60)	(3.09)	(4.70)	(0.18)		
NF Castings	MT	0.35	0.05	0	0.00	0.00	0.00
	MT	(0.32)	(0.07)				
Steel Forging : Medium	MT	195.65	12.54	9.63	0.63	8.05	0.74
	MT	0	0.00	0.00	0.00	(9.63)	(0.63)
Steel Forging-Heavy	MT	40.45	2.38	0.00	0.00	0.00	0.00
		(0)	(0.00)	(0)	(0.00)	(0)	(0.00)
<b>TOTAL</b>			<b>18.10</b>		<b>0.63</b>		<b>0.74</b>
<b>GRAND TOTAL</b>			<b>26586.51</b>		<b>1743.74</b>		<b>1568.55</b>
			(30947.04)		(1498.80)		(1743.74)

(₹ in Crore)

	For the year ended 31.03.2016	For the year ended 31.03.2015
<b>b. Value of imports</b>		
CIF basis		
Raw materials	1727.42	1968.35
Components and spare parts	2240.63	2103.90
Capital goods	40.49	113.88
<b>c. Expenditure in foreign currency</b>		
Royalty	88.07	104.99
Know-how	9.93	10.82
Professional & Consultancy fees	14.82	9.93
Interest and others (incl. on foreign sites)	72.08	227.89
Dividend : @		
a) number of non-resident shareholders	7051	8026
b) number of shares held	387021028	389362343
c) gross amount of dividend	24	59.18
d) year to which dividend relates	2014-15	2013-14
	(Final Dividend)	(Final Dividend)
Interim Dividend : @		
a) number of non-resident shareholders	0	7154
b) number of shares held	0	352044945
c) gross amount of dividend	0	19.01
d) year to which dividend relates	2015-16	2014-15
	(Interim Dividend)	(Interim Dividend)
@ The company has not made any remittance of dividend in foreign currency. The payments have been made in Indian Rupees to the Bankers/Power of Attorney holders of non-resident shareholders.		
<b>d. Value of consumption of raw materials, components, stores &amp; spare parts.</b>		
#Imported (including custom duty)	4017.42	4213.10
Indigenous	9406.68	9963.43
Percentage of total consumption		
Imported	30	30
Indigenous	70	70
<b>e. Earnings in foreign exchange</b>		
Export of goods (FOB basis)	286.63	747.36
Interest	1.54	2.72
Erection & other services	60.85	275.41
Miscellaneous	3.22	29.24
FE in Deemed Exports (incl. domestic contracts and SEZ export)	3297.61	3811.32
# Includes canalised items wherever ascertained.		

(₹ in Crore)

		For the year ended 31.03.2016		For the year ended 31.03.2015	
f. Statement for raw materials and components consumed					
Group of materials	Units	Quantity	Value	Quantity	Value
Ferrous materials					
	MT	288490		233766	
	Metres	4603520		4990653	
	Nos.	1439651		1381094	
	Sq.M	17		4580	
	Kg.	30713375		36771808	
	Others	184		110	
			2311.13		2415.50
Non-ferrous materials					
	MT	30914		9994	
	Metres	809565		1417133	
	Nos.	93649		105614	
	Sq.M.	11		95	
	Kg.	3361933		5674244	
	RL	18398		16397	
	Others	36712		25040	
			296.60		381.37
Insulating materials					
	Metres	51285464		44533937	
	MT	23565		14508	
	Nos.	573489		188061	
	Sq.M.	1671740		3473306	
	Kg	470024		472804	
	LT	5095357		6037487	
	RL	106815		112677	
	M2	120235		114513	
	KL	0		0	
	ST	8		461	
	Others	48538		24934	
			159.08		219.83
Insulated cables and Magnet wires					
	Metres	2274206		6356213	
	Nos	3637		49260	
	Kg	440542		445209	
	Others	4014		5	
			33.14		78.97
Components			5547.26		6040.61
Others			4654.65		4567.71
			13001.86		13703.99

**29. Segment Information**

(₹ in Crore)

	For the year ended 31.3.2016			For the year ended 31.3.2015		
A. PRIMARY SEGMENT - BUSINESS SEGMENTS						
	Power	Industry	Total	Power	Industry	Total
I. SEGMENT REVENUE						
a. Segment Revenue	20714.73	5871.78	26586.51	23983.54	6963.50	30947.04
b. Operating Revenue-External	20714.73	5871.78	26586.51	23983.54	6963.50	30947.04
II. SEGMENT RESULTS						
a. Segment Results	-27.66	-235.16	-262.82	2961.65	341.72	3303.37
b. Unallocated expenses (Net of income)			1187.07			1071.71
c. Profit before finance cost & Income Tax (a) - (b)			-1449.89			2231.66
d. Finance cost			26.82			91.65
e. Net Profit before Income Tax (c) - (d)			-1476.71			2140.01
f. Income Tax			-563.29			720.72
g. Net Profit after Income Tax			-913.42			1419.29
III ASSETS & LIABILITIES						
a. Segment Assets	41900.58	9898.21	51798.79	43714.91	10995.76	54710.67
b. Unallocated Assets			14891.31			13756.46
c. Total Assets			66690.10			68467.13
d. Segment Liabilities	26410.69	6081.52	32492.21	27139.91	6148.28	33288.19
e. Unallocated Liabilities			1144.54			1094.34
f. Total Liabilities			33636.75			34382.53
IV OTHER INFORMATION						
a. Cost incurred during the period to acquire fixed assets (Incl. CWIP)	347.74	109.04		293.85	124.19	
b. Depreciation	692.97	181.33		796.99	212.18	
c. Non Cash Expenses (other than depreciation)	1844.38	515.84		1262.80	397.35	
B. SECONDARY SEGMENT - GEOGRAPHICAL SEGMENTS						
	Within India	Outside India	Total	Within India	Outside India	Total
1 Net Sales / Income from Operations	25370.50	1216.01	26586.51	29701.31	1245.73	30947.04
2 Total Assets	65997.40	692.70	66690.10	67705.43	761.70	68467.13
3 Cost incurred during the period to acquire Fixed Assets	500.03	6.23	506.26	500.08	0.35	500.43

The primary segments have been identified as 'Power' and 'Industry' based on the orders booked by the respective business sector. The order booked by International operation group is taken to Power or Industry as the case may be.



# Independent Auditors' Report

TO  
THE MEMBERS OF  
**BHARAT HEAVY ELECTRICALS LIMITED**

## Report on the Consolidated Financial Statements

We have audited the accompanying consolidated financial statements of **BHARAT HEAVY ELECTRICALS LIMITED** hereinafter referred to as “the Holding Company”) and its subsidiary (the Holding Company and its one subsidiary together referred to as “the Group”) and four jointly controlled entities, comprising of the Consolidated Balance Sheet as at 31st March, 2016, the Consolidated Statement of Profit and Loss, the Consolidated Cash Flow Statement for the year then ended, and a summary of the significant accounting policies and other explanatory information (hereinafter referred to as “the consolidated financial statements”).

## Management's Responsibility for the Consolidated Financial Statements

The Holding Company's Board of Directors is responsible for the preparation of these consolidated financial statements in terms of the requirements of the Companies Act, 2013 (hereinafter referred to as “the Act”) that give a true and fair view of the consolidated financial position, consolidated financial performance and consolidated cash flows of the Group including its Jointly controlled entities in accordance with the accounting principles generally accepted in India, including the Accounting Standards specified under Section 133 of the Act, read with Rule 7 of the Companies (Accounts) Rules, 2014. The respective Board of Directors of the companies included in the Group and jointly controlled entities are responsible for maintenance of adequate accounting records in accordance with the provisions of the Act for safeguarding the assets of the Group and for preventing and detecting frauds and other irregularities; the selection and application of appropriate accounting policies; making judgments and estimates that are reasonable and prudent; and the design, implementation and maintenance of adequate internal financial controls, that were

operating effectively for ensuring the accuracy and completeness of the accounting records, relevant to the preparation and presentation of the financial statements that give a true and fair view and are free from material misstatement, whether due to fraud or error, which have been used for the purpose of preparation of the consolidated financial statements by the Directors of the Holding Company, as aforesaid.

## Auditor's Responsibility

Our responsibility is to express an opinion on these consolidated financial statements based on our audit.

While conducting the audit, we have taken into account the provisions of the Act, the accounting and auditing standards and matters which are required to be included in the audit report under the provisions of the Act and the Rules made there under.

We conducted our audit in accordance with the Standards on Auditing specified under Section 143(10) of the Act. Those Standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and the disclosures in the consolidated financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal financial control relevant to the Holding Company's preparation of the consolidated financial statements that give a true and fair view in order to design audit procedures that are appropriate in the circumstances. An audit also includes evaluating the appropriateness of the accounting policies used and the reasonableness of the accounting estimates made by the Holding Company's Board of Directors, as well as evaluating the overall presentation of the consolidated financial statements. We believe that the audit evidence obtained by us and the audit evidence obtained by the other auditors in terms of their reports referred to in sub-paragraph (a) of the Other Matters paragraph

below, is sufficient and appropriate to provide a basis for our audit opinion on the consolidated financial statements.

## Opinion

In our opinion and to the best of our information and according to the explanations given to us, the aforesaid consolidated financial statements give the information required by the Act in the manner so required and give a true and fair view in conformity with the accounting principles generally accepted in India, of the consolidated state of affairs of the Group and its jointly controlled entities as at 31st March, 2016, and their consolidated loss and their consolidated cash flows for the year ended on that date.

## Other Matters

- (a) We did not audit the financial statements of one jointly controlled entity and one subsidiary, whose financial statements reflect total assets of ₹ 250.48 crores as at 31<sup>st</sup> March, 2016, total revenues of ₹ 330.10 crores and net cash flows amounting to (-) ₹ 13.91 crores for the year ended on that date, as considered in the consolidated financial statements. These financial statements have been audited by other auditors whose reports have been furnished to us by the Management and our opinion on the consolidated financial statements, in so far as it relates to the amounts and disclosures included in respect of these subsidiary and jointly controlled entity, and our report in terms of sub-sections (3) and (11) of Section 143 of the Act, insofar as it relates to the aforesaid subsidiary and jointly controlled entity, is based solely on the reports of the other auditors.
- (b) We did not audit the financial statements of three jointly controlled entities, whose financial statements reflect total assets of ₹ 3376.39 crores as at 31<sup>st</sup> March, 2016, total revenues of ₹ 401.49 crores and net cash flows amounting to (-) ₹ 9.28 crores for the year ended on that date, as considered in the consolidated financial statements. These financial statements are unaudited and have been furnished to us by the Management and our opinion on the consolidated financial statements, in so far as it relates to the amounts and disclosures included in respect of these jointly controlled entities, and our report in terms of sub-sections (3) and (11) of Section 143 of the Act in so far as it relates to the aforesaid jointly controlled entities, is based

solely on such unaudited financial statements. In our opinion and according to the information and explanations given to us by the Management, these financial statements are not material to the Group.

Our opinion on the consolidated financial statements, and our report on Other Legal and Regulatory Requirements below, is not modified in respect of the above matters with respect to our reliance on the work done and the reports of the other auditors and the financial statements certified by the Management.

The accounts of Powerplant Performance Improvements Ltd. a Joint Venture of BHEL have not been consolidated as the said company is under liquidation and full amount of equity investment has been provided. The accounts of Latur Power Company Ltd. have not been consolidated as the said company is under liquidation. However full amount of equity investment in Latur Power Company Ltd. has been realized.

## Report on Other Legal and Regulatory Requirements

1. As required by Section 143 (3) of the Act, we report, to the extent applicable, that:
  - (a) We have sought and obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purposes of our audit of the aforesaid consolidated financial statements.
  - (b) In our opinion, proper books of account as required by law relating to preparation of the aforesaid consolidated financial statements have been kept so far as it appears from our examination of those books and the reports of the other auditors.
  - (c) The Consolidated Balance Sheet, the Consolidated Statement of Profit and Loss, and the Consolidated Cash Flow Statement dealt with by this Report are in agreement with the relevant books of account maintained for the purpose of preparation of the consolidated financial statements.
  - (d) In our opinion, the aforesaid consolidated financial statements comply with the Accounting Standards specified under Section 133 of the Act, read with Rule 7 of the Companies (Accounts) Rules, 2014.

- (e) Being a Government Company, Section 164(2) of the Companies Act, 2013 regarding 'whether any director is disqualified from being appointed as a director' is not applicable to the Company in view of Notification no. G.S.R. 463(E) dtd. 05-06-2015.
- (f) With respect to the adequacy of the internal financial controls over financial reporting of the Group and jointly controlled entities and the operating effectiveness of such controls, refer to our separate Report in "Annexure A".
- (g) With respect to the other matters to be included in the Auditor's Report in accordance with Rule 11 of the Companies (Audit and Auditor's) Rules, 2014, in our opinion and to the best of our information and according to the explanations given to us:
- i. The consolidated financial statements disclose the impact of pending litigations on the consolidated financial position of the Group and jointly controlled entities– Refer Note 31(7) to the consolidated financial statements.
  - ii. Provision has been made in the consolidated financial statements, as required under the applicable law or accounting standards, for material foreseeable losses, if any, on long-term contracts – Refer Note 31(10) to the consolidated financial statements in respect of such items as it relates to the Group and jointly controlled entities and
  - iii. There has been no delay in transferring amounts, required to be transferred, to the Investor Education and Protection Fund by the Holding Company and its subsidiary companies and jointly controlled companies incorporated in India.

**For Wahi & Gupta**  
Chartered Accountants  
**FRN-002263N**

  
**(CA Y K Gupta)**  
Partner  
M.No.016020

**For DSP & Associates**  
Chartered Accountants  
**FRN-006791N**

  
**(CA Sanjay Jain)**  
Partner  
M.No. 084906

**For S B A & Company**  
Chartered Accountants  
**FRN-004651C**

  
**(CA Vikas Jain)**  
Partner  
M.No. 078245

**Place : New Delhi**  
**Date : May 27, 2016**

## **Annexure “A” to the Independent Auditor’s Report of even date on the Consolidated Financial Statements of Bharat Heavy Electricals Limited**

### **Report on the Internal Financial Controls under Clause (i) of Sub-section 3 of Section 143 of the Companies Act, 2013 (“the Act”)**

In conjunction with our audit of the consolidated financial statements of the Company as of and for the year ended March 31, 2016, we have audited the internal financial controls over financial reporting of Bharat Heavy Electricals Limited (hereinafter referred to as “the Holding Company”) as of that date. We did not audit the financial statements of one Subsidiary and four Jointly Control Entities out of which one Jointly Control Entity and one Subsidiary have been audited by the other Auditor and three Jointly Control Entities are unaudited.

### **Management’s Responsibility for Internal Financial Controls**

The respective Board of Directors of the Holding company, its subsidiary company and jointly controlled companies, which are companies incorporated in India, are responsible for establishing and maintaining internal financial controls based on the internal control over financial reporting criteria established by the Company considering the essential components of internal control stated in the Guidance Note on Audit of Internal Financial Controls Over Financial Reporting issued by the Institute of Chartered Accountants of India (ICAI). These responsibilities include the design, implementation and maintenance of adequate internal financial controls that were operating effectively for ensuring the orderly and efficient conduct of its business, including adherence to the respective company’s policies, the safeguarding of its assets, the prevention and detection of frauds and errors, the accuracy and completeness of the accounting records, and the timely preparation of reliable financial information, as required under the Companies Act, 2013.

### **Auditor’s Responsibility**

Our responsibility is to express an opinion on the Company’s internal financial controls over financial reporting based on our audit. We conducted our audit in accordance with the Guidance Note on Audit of Internal Financial Controls Over Financial Reporting (the “Guidance Note”) issued by the ICAI and the Standards on Auditing, issued by ICAI and deemed to

be prescribed under section 143(10) of the Companies Act, 2013, to the extent applicable to an audit of internal financial controls, both issued by the Institute of Chartered Accountants of India. Those Standards and the Guidance Note require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether adequate internal financial controls over financial reporting was established and maintained and if such controls operated effectively in all material respects.

Our audit involves performing procedures to obtain audit evidence about the adequacy of the internal financial controls system over financial reporting and their operating effectiveness. Our audit of internal financial controls over financial reporting included obtaining an understanding of internal financial controls over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. The procedures selected depend on the auditor’s judgement, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error.

We believe that the audit evidence we have obtained and the audit evidence obtained by the other auditors in terms of their reports referred to in the Other Matters paragraph below, is sufficient and appropriate to provide a basis for our audit opinion on the Company’s internal financial controls system over financial reporting.

### **Meaning of Internal Financial Controls Over Financial Reporting**

A company’s internal financial control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company’s internal financial control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit

preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorisations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorised acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

### **Inherent Limitations of Internal Financial Controls Over Financial Reporting**

Because of the inherent limitations of internal financial controls over financial reporting, including the possibility of collusion or improper management override of controls, material misstatements due to error or fraud may occur and not be detected. Also, projections of any evaluation of the internal financial controls over financial reporting to future periods are subject to the risk that the internal financial control over financial reporting may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

### **Opinion**

In our opinion, the Holding Company, its one subsidiary company and four jointly controlled entities, which are entities incorporated in India, have, in all material respects, an adequate internal financial controls system over financial reporting and such internal financial controls over financial reporting were operating effectively as at March 31, 2016, based on the internal control over financial reporting criteria established by the Company considering the essential components of internal control stated in the Guidance Note on Audit of Internal Financial Controls Over Financial Reporting issued by the Institute of Chartered Accountants of India.

### **Other Matters**

Our aforesaid reports under Section 143(3)(i) of the Act on the adequacy and operating effectiveness of the internal financial controls over financial reporting insofar as it relates to one subsidiary company and four jointly controlled entities, which are companies incorporated in India, is based on the corresponding report of the auditor of one jointly controlled entity and one subsidiary company incorporated in India and management certificate of other three jointly controlled entities incorporated in India.

**For Wahi & Gupta**  
Chartered Accountants  
**FRN-002263N**



**(CA Y K Gupta)**  
Partner  
M.No.016020

**For DSP & Associates**  
Chartered Accountants  
**FRN-006791N**



**(CA Sanjay Jain)**  
Partner  
M.No. 084906

**For S B A & Company**  
Chartered Accountants  
**FRN-004651C**



**(CA Vikas Jain)**  
Partner  
M.No. 078245

**Place : New Delhi**  
**Date : May 27, 2016**





गोपनीय

No./MAB-III/Rep./26-06/CFS-BHEL/2016-17/ 580

भारतीय लेखा एवं लेखा परीक्षा विभाग

प्रचारित

प्रधान, निदेशक, वाणिज्यिक लेखा परीक्षा

एवं पंचम सदस्य लेखा परिषद् बोर्ड-III

नई दिल्ली

Indian Audit &amp; Accounts Department

OFFICE OF THE  
PRINCIPAL DIRECTOR OF COMMERCIAL AUDIT  
& EX-OFFICIO MEMBER, AUDIT BOARD-III  
NEW DELHI

दिनांक/Dated 22/7/2016

सेवा में,

अध्यक्ष एवं प्रबंध निदेशक,  
भारत हेवी इलेक्ट्रिकल्स लिमिटेड,  
नई दिल्ली

**विषय: 31 मार्च 2016 को समाप्त वर्ष के लिए भारत हेवी इलेक्ट्रिकल्स लिमिटेड के Consolidated Financial Statements (CFS) पर कंपनी अधिनियम 2013 की धारा 143(6)(b) एवं धारा 129(4) के अंतर्गत भारत के नियंत्रक-महालेखापरीक्षक की टिप्पणियाँ**

महोदय,

मे भारत हेवी इलेक्ट्रिकल्स लिमिटेड के 31 मार्च 2016 को समाप्त वर्ष के Consolidated Financial Statements (CFS) पर कंपनी अधिनियम 2013 की धारा 143(6)(b) एवं धारा 129(4) के अंतर्गत भारत के नियंत्रक-महालेखापरीक्षक की टिप्पणियाँ असेमित कर रही हूँ। कृपया इस पत्र की संलग्नकें सहित प्राप्ति की कृपया चेकी जाए।

सलमन: यशोपति

सखीया,

रितीका

(रितीका शर्मा)  
प्रधान निदेशक

**COMMENTS OF THE COMPTROLLER AND AUDITOR GENERAL OF INDIA UNDER SECTION 143(6)(b) READ WITH SECTION 129(4) OF THE COMPANIES ACT, 2013 ON THE CONSOLIDATED FINANCIAL STATEMENTS OF BHARAT HEAVY ELECTRICALS LIMITED FOR THE YEAR ENDED 31 MARCH 2016**

The preparation of consolidated financial statements of Bharat Heavy Electricals Limited for the year ended 31 March 2016 in accordance with the financial reporting framework prescribed under the Companies Act, 2013(Act) is the responsibility of the management of the company. The statutory auditors appointed by the Comptroller and Auditor General of India under Section 139(5) read with Section 129(4) of the Act are responsible for expressing opinion on the financial statements under Section 143 read with Section 129(4) of the Act based on independent audit in accordance with the standards on auditing prescribed under Section 143(10) of the Act. This is stated to have been done by them vide their Audit Report dated 27 May 2016.

I, on behalf of the Comptroller and Auditor General of India, have conducted a supplementary audit under Section 143(6)(a) read with Section 129(4) of the Act of the consolidated financial statements of Bharat Heavy Electricals Limited for the year ended 31 March 2016. We conducted a supplementary audit of the financial statements of Bharat Heavy Electricals Limited, but did not conduct supplementary audit of the financial statements of subsidiaries, associate companies and jointly controlled entities listed in Annexure I for the year ended on that date. Further, Section 139(5) and 143(6)(b) of the Act are not applicable to BHEL-GE Gas Turbine Services Limited, being private entity for appointment of their statutory auditor nor for conduct of supplementary audit. Accordingly, C&AG has neither appointed the statutory auditor nor conducted the supplementary audit of the company. This supplementary audit has been carried out independently without access to the working papers of the statutory auditors and is limited primarily to inquiries of the statutory auditors and company personnel and a selective examination of some of the accounting records.

On the basis of my audit nothing significant has come to my knowledge which would give rise to any comment upon or supplement to statutory auditors' report.

For and on behalf of the  
Comptroller & Auditor General of India



(Ritika Bhatia)

Principal Director of Commercial Audit &  
Ex-officio Member, Audit Board – III,  
New Delhi

Place: New Delhi  
Date: 22 July 2016

**List of subsidiaries, associate companies and jointly controlled entities whose financial statements were not audited by the Comptroller and Auditor General of India**

**A. Subsidiaries Companies**

1. BHEL Electrical Machines Limited

**B. Joint Ventures Companies**

1. NTPC-BHEL Power Projects Private Limited
2. Dada Dhuniwale Khandwa Power Limited
3. Raichur Power Corporation Limited

## Consolidated Balance Sheet

For the year ended 31<sup>st</sup> March, 2016

(₹ in Crore)

Particulars	Note No.	Figures as at 31.03.2016		Figures as at 31.03.2015	
<b>I. EQUITY AND LIABILITIES</b>					
<b>(1) Shareholders' funds</b>					
(a) Share capital	1	489.52		489.52	
(b) Reserves & surplus	2	32682.98	33172.50	33717.08	34206.60
<b>(2) Minority Interest</b>			0.77		2.23
<b>(3) Non-current liabilities</b>					
(a) Long-term borrowings	3	2441.00		1733.62	
(b) Other long term liabilities	4	4592.58		5359.02	
(c) Long term provisions	5	8005.18	15038.76	6817.18	13909.82
<b>(4) Current liabilities</b>					
(a) Short-term borrowings	6	15.10		98.79	
(b) Trade payables	7	9050.18		9087.71	
(c) Other current liabilities	8	8891.77		9266.65	
(d) Short-term provisions	9	3474.97	21432.02	4274.19	22727.34
<b>TOTAL</b>			<b>69644.05</b>		<b>70845.99</b>
<b>II. ASSETS</b>					
<b>(1) Non current assets</b>					
(a) Fixed assets	10				
(i) Tangible assets		3927.78		4069.66	
(ii) Intangible assets		138.59		160.09	
(iii) Capital work-in-progress		3170.68		2596.27	
(iv) Intangible assets under development		8.38	7245.43	17.29	6843.31
(b) Non-current investments	11	5.91		5.91	
(c) Deferred tax assets (net)	12	3145.92		2229.42	
(d) Long-term loans and advances	13	949.08		1278.60	
(e) Other non-current assets	14	11246.45	15347.36	11447.40	14961.33
<b>(2) Current assets</b>					
(a) Inventories	15	9657.29		10116.87	
(b) Trade receivables	16	24757.48		26520.12	
(c) Cash and Bank Balances	17	10198.49		9948.90	
(d) Short term loans and advances	18	2313.99		2278.95	
(e) Other current assets	19	124.01	47051.26	176.51	49041.35
<b>Total</b>			<b>69644.05</b>		<b>70845.99</b>

**Significant accounting policies**


**Other notes to financial statements**

31

The accompanying Notes 1 to 31 & significant accounting policies form an integral part of the consolidated financial statements.

**For and on behalf of Board of Directors**

  
**(I.P. Singh)**  
Company Secretary

  
**(T. Chockalingam)**  
Director (Finance)

  
**(Atul Sobti)**  
Chairman and Managing Director

As per our report of even date attached

**For Wahi & Gupta**  
Chartered Accountants  
**FRN-002263N**

**For DSP & Associates**  
Chartered Accountants  
**FRN-006791N**

**For S B A & Company**  
Chartered Accountants  
**FRN-004651C**

  
**(CA Y K Gupta)**  
Partner  
M.No.016020

  
**(CA Sanjay Jain)**  
Partner  
M.No. 084906

  
**(CA Vikas Jain)**  
Partner  
M.No. 078245

**Place : New Delhi**  
**Date : May 27, 2016**

# Consolidated Statement of Profit and Loss

For the year ended 31<sup>st</sup> March, 2016

(₹ in Crore)

Particulars	Note No.	Figures for the current year ended 31.03.2016	Figures for the previous year ended 31.03.2015
<b>I. Revenue from operations (Gross)</b>	<b>20</b>	<b>27314.00</b>	<b>31554.76</b>
Less: Excise duty		<b>960.87</b>	921.66
Less: Service tax & Swachh Bharat Cess		<b>495.48</b>	485.58
<b>Revenue from operations (Net)</b>		<b>25857.65</b>	<b>30147.52</b>
<b>II. Other operational income</b>	<b>21</b>	<b>492.95</b>	700.23
<b>III. Other income</b>	<b>22</b>	<b>1459.60</b>	1230.59
<b>Total revenue (I to III)</b>		<b>27810.20</b>	<b>32078.34</b>
<b>IV. Expenses</b>			
Cost of material consumption, erection and engineering expenses	23	<b>17047.87</b>	18278.50
(Increase)/Decrease in work in progress & finished goods	24	<b>208.58</b>	-339.50
Employee benefits expense	25	<b>5567.49</b>	5475.48
Finance costs	26	<b>27.69</b>	92.43
Depreciation & amortisation expense	10.1	<b>942.53</b>	1082.01
Other expenses of manufacture, administration, selling and distribution	27	<b>3049.49</b>	3714.66
Provisions (net)	28	<b>2453.70</b>	1604.67
Less: Cost of jobs done for internal use		<b>46.57</b>	27.49
<b>Total expenses</b>		<b>29250.78</b>	<b>29880.76</b>
<b>V. Profit before prior period adjustments, exceptional items and tax</b>		<b>-1440.58</b>	2197.58
<b>VI. Add/less: Prior period adjustments (net)</b>	<b>29</b>	<b>-5.90</b>	-10.29
<b>VIII. Profit before tax for the year</b>		<b>-1446.48</b>	2187.29
<b>IX. Less: Tax expense</b>	<b>30</b>		
a) Current tax		<b>367.41</b>	968.87
b) Deferred tax		<b>-916.50</b>	-232.02
<b>X. Profit for the year before minority interest</b>		<b>-897.39</b>	1450.44
<b>Less: Minority interest</b>		<b>-1.46</b>	-1.94
<b>XI. Profit after minority interest for the year</b>		<b>-895.93</b>	1452.38
Earning per share (Basic & Diluted) (Refer point no. 15 of Note 31) in ₹		<b>-3.66</b>	5.93
Face Value per Share (Refer point no. 15 of Note 31) in ₹		<b>2.00</b>	2.00
<b>Significant accounting policies</b>			
<b>Notes to financial statements</b>	<b>31</b>		

The accompanying notes 1 to 31 & significant accounting policies form an integral part of the consolidated financial statements.

Total Revenue includes ₹ **697.63 Crore** (previous year ₹ 600.78 Crore) share of jointly controlled entities.

Total Expenses includes ₹ **675.71 Crore** (previous year ₹ 543.41) share of jointly controlled entities.

For and on behalf of Board of Directors

  
(I.P. Singh)  
Company Secretary

  
(T. Chockalingam)  
Director (Finance)

  
(Atul Sobti)  
Chairman and Managing Director

As per our report of even date attached

**For Wahi & Gupta**  
Chartered Accountants  
**FRN-002263N**

  
(CA Y K Gupta)  
Partner  
M.No.016020

**For DSP & Associates**  
Chartered Accountants  
**FRN-006791N**

  
(CA Sanjay Jain)  
Partner  
M.No. 084906

**For S B A & Company**  
Chartered Accountants  
**FRN-004651C**

  
(CA Vikas Jain)  
Partner  
M.No. 078245

Place : New Delhi  
Date : May 27, 2016



## Consolidated Cash Flow Statement

for the year ended March 31, 2016

(₹ in Crore)

	2015-16	2014-15
<b>A. Cash Flow from Operating Activities</b>		
Net Profit Before Tax as per Statement of Profit and Loss	<b>-1446.48</b>	<b>2187.29</b>
Adjustment for		
Depreciation/Amortisation	942.61	1082.34
Lease Equalisation	0.71	0.60
Provisions (Net)	2409.13	1124.47
Bad Debts & LD & investment written off	24.33	62.64
Profit on sale of Fixed assets	-5.75	-5.74
Finance costs	27.69	92.43
Interest/Dividend Income	-805.88	-850.82
Operating Profit before Working Capital changes	<b>1146.36</b>	<b>3693.21</b>
Adjustment for		
Trade & Other Receivables	-39.69	956.31
Inventories	374.11	-353.45
Trade Payable & Advances	-843.19	-2427.65
Cash generated from operations	637.59	1868.42
Direct Taxes Paid (Net of refund)	-325.83	-1047.23
<b>Net Cash Inflow/(Outflow) from Operating Activities</b>	<b>311.76</b>	<b>821.19</b>
<b>B. Cash Flow from Investing Activities</b>		
Purchase of Fixed Assets	-1367.47	-325.63
Sale and Disposal of Fixed Assets	39.19	48.64
Interest & Dividend income	857.79	927.39
<b>Net Cash used in Investing Activities</b>	<b>470.49</b>	<b>-650.40</b>
<b>C. Cash Flow from Financing Activities</b>		
Short-term & Long-term borrowings ( Net)	643.13	-2806.24
Share application money pending allotment	-	-13.36
Dividend Paid (including tax on dividend )	-208.56	-614.07
Finance costs	-26.25	-108.99
<b>Net Cash used in Financing Activities</b>	<b>-408.32</b>	<b>3542.66</b>
<b>D. Net Increase/(Decrease) in Cash and Cash Equivalents</b>	<b>249.59</b>	<b>-2071.07</b>
Opening Balance of Cash and Cash Equivalents	9948.90	12019.97
Closing Balance of Cash and Cash Equivalents (Refer note no. 17)	10198.49	9948.90


Note 1 : Cash & Cash Equivalents consists of cash and bank balance & deposits with banks.

2 : Previous year's figures have been regrouped/rearranged where ever necessary.

3 : Cash & Cash Equivalents includes ₹ 3.27 Crore (previous year ₹ 3.72 Crore) unclaimed dividend lying in designated bank accounts

For and on behalf of Board of Directors

  
(I.P. Singh)  
Company Secretary

  
(T. Chockalingam)  
Director (Finance)

  
(Atul Sobti)  
Chairman and Managing Director

As per our report of even date attached

**For Wahi & Gupta**  
Chartered Accountants  
FRN-002263N

  
(CA Y K Gupta)  
Partner  
M.No.016020

**For DSP & Associates**  
Chartered Accountants  
FRN-006791N

  
(CA Sanjay Jain)  
Partner  
M.No. 084906

**For S B A & Company**  
Chartered Accountants  
FRN-004651C

  
(CA Vikas Jain)  
Partner  
M.No. 078245

Place : New Delhi  
Date : May 27, 2016

## 1 - Share capital

(₹ in Crore)

	Figures as at 31.03.2016		Figures as at 31.03.2015	
<b>Authorised</b>				
1000,00,00,000 equity shares of ₹2 each (previous year 1000,00,00,000 equity shares of ₹ 2 each)		<b>2000.00</b>		2000.00
<b>Issued, Subscribed &amp; Paid up Capital</b>		<b>489.52</b>		489.52
244,76,00,000 fully paid equity shares of ₹ 2 each (previous year 244,76,00,000 equity shares of ₹ 2 each)				
a) The reconciliation of the number of equity shares outstanding is set out below:				
	<b>Number</b>	<b>Amount</b>	<b>Number</b>	<b>Amount</b>
Shares outstanding at the beginning of the year	<b>2447600000</b>	<b>489.52</b>	2447600000	489.52
Shares bought back during the year	-	-	-	-
Shares outstanding at the end of the year	<b>2447600000</b>	<b>489.52</b>	2447600000	489.52
b) Details of shares held by shareholders holding more than 5% shares at the year end	<b>No. of shares</b>	<b>% age of holding</b>	<b>No. of shares</b>	<b>%age of holding</b>
President of India (POI) alongwith nominees	<b>1543452000.00</b>	<b>63.06%</b>	1543452000.00	63.06%
Life Insurance Corporation of India	<b>230453920.00</b>	<b>9.42%</b>	230516784.00	9.42%
Face Value per share (₹)		<b>2.00</b>		2.00
c) Terms / rights attached to the equity shares:				
The company has only one class of equity shares having a par value of ₹ <b>2 per share</b> (previous year ₹ 2 per share). Each holder of the equity shares is entitled to one vote per share.				

## 2 - Reserves & surplus

	(₹ in Crore)	
	Figures as at 31.03.2016	Figures as at 31.03.2015
<b>Capital reserve</b>		
Opening Balance	36.56	36.56
Add: Additions	-	-
Less: Deductions	-	-
	<b>36.56</b>	<b>36.56</b>
<b>General reserve</b>		
Opening balance	32383.12	31379.69
Add: transfer from surplus of profit & loss	2.97	1003.43
	<b>32386.09</b>	<b>32383.12</b>
<b>Surplus i.e. balance in statement of profit and loss</b>		
Opening balance	1297.40	1251.10
Less: Depreciation Adjustment		40.57
Add: net profit for the year	-895.93	1452.38
Less: Adjustments		0.65
Profit available for appropriation	401.47	2662.26
Less: Appropriation-		
- General reserve	2.97	1003.43
- Dividend (including interim dividend of ₹ 16.42 crore, previous year ₹ 149.07 crore)	114.80	300.82
- Corporate dividend tax (including ₹ 3.34 crore, previous year ₹ 29.72 crore)	23.37	60.61
	<b>260.33</b>	<b>1297.40</b>
	<b>32682.98</b>	<b>33717.08</b>

### 3 - Long-term borrowings

(₹ in Crore)

Particulars	Figures as at 31.03.2016	Figures as at 31.03.2015
<b>Secured</b>		
Loans from banks	<b>468.10</b>	403.00
(Loan from Banks First pari passu charge on the moveable assets present and future comprising of moveable plant and machinery spares fitting furniture spare parts tools and accessories and stores and other moveables including operating cashflows, treasury income, Trade receivable, receivables, cost commissions and revenue present and future along with a first charge of any other bank account wherever maintained of 2*800 MW Yermurus thermal power station.)		
Loans from Power Finance Corporation Ltd.	<b>1846.17</b>	1269.22
( All the moveable and immovable property of RPCL 2*800 MW Yermarus Thermal Power Station including all Plant and Machinery and other assets as specified in MOU and deed of hypothecation dated 14th july 2011 shall be subject to a first charge in favour of PFC)		
Long term maturities of finance lease obligations	<b>126.73</b>	61.40
	<b>2441.00</b>	<b>1733.62</b>

Includes ₹ **2314.70 Crore** (previous year ₹ 1672.62 crore) share of jointly controlled entities.

### 4 - Other long term liabilities

(₹ in Crore)

	Figures as at 31.03.2016	Figures as at 31.03.2015
Trade payables	<b>791.62</b>	701.82
Advances received from customers & others	<b>3675.76</b>	4563.04
Deposits from contractors & others	<b>125.20</b>	94.16
	<b>4592.58</b>	<b>5359.02</b>

Includes ₹ **3.22 Crore** (previous year ₹ NIL crore) share of jointly controlled entities.

### 5 - Long term provisions

(₹ in Crore)

	Figures as at 31.03.2016	Figures as at 31.03.2015
Provision for employee benefits	<b>2997.73</b>	2713.84
Contractual Obligation	<b>4534.51</b>	3605.24
Other long-term provisions	<b>472.94</b>	498.10
	<b>8005.18</b>	<b>6817.18</b>

Includes ₹ **14.01 Crore** (previous year ₹ 10.46 crore) share of jointly controlled entities.

## 6 - Short-term borrowings

(₹ in Crore)

	Figures as at 31.03.2016	Figures as at 31.03.2015
<b>Secured</b>		
<b>Loans from banks</b>		
Short term loan	5.00	-
Cash credit	3.53	2.14
<b>Unsecured</b>		
Amount payable to KPCL	6.57	96.65
	<b>15.10</b>	<b>98.79</b>

Amount payable to KPCL maybe converted to equity at the option of KPCL.

Includes ₹ **11.57 Crore** (previous year ₹ 94.01 Crore) share of jointly controlled entities.

## 7 - Trade payables

(₹ in Crore)

	Figures as at 31.03.2016	Figures as at 31.03.2015
Trade Payables	9014.01	9043.60
Acceptances	36.17	44.11
	<b>9050.18</b>	<b>9087.71</b>

(Trade payables includes for Micro & Small Enterprises ₹ **197.02 crore** (previous year ₹ 202.39 crore).

Includes ₹ **338.05 Crore** (previous year ₹ 283.88 crore) share of jointly controlled entities.

## 8 - Other current liabilities

(₹ in Crore)

	Figures as at 31.03.2016	Figures as at 31.03.2015
Current maturities of finance lease obligation	76.50	57.06
Advances received from customers & others	6758.79	7052.17
Deposits from Contractors & others	521.41	519.21
Unclaimed dividend	3.27	3.72
Other payables/ liabilities *	1523.47	1627.60
Interest accrued but not due	0.57	0.40
Interest accrued and due on:		
State Government Loans	2.33	2.33
Finance lease	5.43	4.16
	<b>8891.77</b>	<b>9266.65</b>

Advances received from customers & others include valuation adjustment

- ₹ **2865.39 Crore** (previous year ₹ 2637.89 Crore)

\* includes Employees dues and Statutory dues

Includes ₹ **120.40 Crore** (previous year ₹ 188.65 crore) share of jointly controlled entities.



## 9 - Short-term provisions

(₹ in Crore)

	Figures as at 31.03.2016	Figures as at 31.03.2015
Provision for employee benefits	589.05	576.03
Proposed dividend	98.38	156.51
Corporate dividend tax	20.03	31.84
Contractual obligation	1632.44	2513.97
Other short-term provisions	1135.07	995.84
	<b>3474.97</b>	<b>4274.19</b>

Includes ₹ 18.48 Crore (previous year ₹ 34.73 crore) share of jointly controlled entities.

## 10 - Fixed assets

(₹ in Crore)

	Figures as at 31.03.2016	Figures as at 31.03.2015
<b>(i) Tangible assets</b>		
Gross block	12957.50	12254.52
Less: Accumulated depreciation	9031.26	8187.04
Less: Accumulated impairment	0.00	0.07
Less: Lease adjustment account	-1.54	-2.25
Net Block	<b>3927.78</b>	<b>4069.66</b>
<b>(ii) Intangible assets</b>		
Gross block	471.54	444.43
Less: Accumulated depreciation/amortisation	332.95	284.34
Net block	<b>138.59</b>	<b>160.09</b>
<b>(iii) Capital work in progress</b>		
Construction work-in-progress -Civil	477.01	235.27
Construction work-in-progress -Others	637.90	328.48
Construction stores (including in transit)	3.93	2.88
Plant & machinery and other equipment		
- Under Erection/ Fabrication/awaiting erection	1981.90	1956.72
- In transit	69.94	72.92
	<b>3170.68</b>	<b>2596.27</b>
<b>(iv) Intangible assets under development</b>	<b>8.38</b>	<b>17.29</b>
<b>Total</b>	<b>7245.43</b>	<b>6843.31</b>

Refer to details in Note no. 10.1

Includes ₹ 2863.75 Crore (previous year ₹ 2187.06 crore) share of jointly controlled entities.

## Note 10.1

### Fixed Assets

(₹ in Crore)

	Gross Block				Depreciation					Net Block	
	Cost As at 31.03.2015	Additions/ adjustments during the year	Deductions/ adjustments during the year	Cost As at 31.03.2016	Accumulated Depreciation/ Amortisation as at 31.03.2015	Depreciation for the year	Depreciation Adjustment	Lease Adjustment Account as at 31.03.2016	Accumulated Depreciation/ Amortisation as at 1.03.2016	As at 31.03.2016	As at 31.03.2015
<b>Factory/ Office Complex</b>											
<b>(i) Tangible assets</b>											
Freehold land (incl. development exp.)	25.46			25.46						25.46	25.46
Leasehold land (incl. development exp.)	73.83	10.32	0.02	84.13	1.68	0.63	-0.02		2.29	81.84	72.16
Roads, bridges and culverts	32.00	0.25		32.25	18.28	4.91	0.07		23.26	8.99	13.72
Buildings	1916.33	128.57	12.79	2032.11	785.90	83.57	-11.57		857.90	1174.21	1130.43
Leashold buildings	3.12			3.12	1.49	0.05			1.54	1.58	1.63
Drainage, sewerage and water supply	31.39	0.07		31.46	14.05	0.79			14.84	16.62	17.34
Railway siding	19.51			19.51	10.78	0.93			11.71	7.80	8.73
Locomotives and wagons	55.24			55.24	27.16	3.12			30.28	24.96	28.08
Plant & Machinery	7640.55	330.83	8.80	7962.58	5438.52	626.56	-8.28		6056.80	1905.78	2202.03
Electronic data processing equipment	206.39	33.37	0.03	239.73	201.49	5.24	16.84		223.57	16.16	4.90
Electrical installations	349.32	16.48	2.14	363.66	170.86	30.36	-0.67		200.55	163.11	178.46
Construction Equipment	273.03	13.07	2.00	284.10	223.42	23.80	-1.89		245.33	38.77	49.61
Vehicles	24.82	3.04	0.18	27.68	18.61	1.45	-0.13		19.93	7.75	6.21
Furniture & fixtures	61.14	7.64	0.44	68.34	27.36	7.82	-0.27		34.91	33.43	33.78
Office & other equipment	205.41	14.89	0.64	219.66	144.69	29.59	-0.30		173.98	45.68	60.72
Fixed assets costing upto ₹10000/-	116.37	4.26	1.18	119.45	116.36	4.37	-1.28		119.45		
Assets Given on Lease	497.15			497.15	497.15			1.54	497.15	1.54	2.25
Assets taken on Lease											
Plant & Machinery	0.16			0.16	0.16				0.16		
EDP Equipment taken on lease	368.70	118.30	21.09	465.91	318.00	45.43	-31.79		331.64	134.27	50.70
Office & other equipment taken on lease	4.17	29.68	18.26	15.59	2.55	8.98	-7.52		4.01	11.58	1.61
Other assets taken on lease	3.30	0.46	0.50	3.26	2.66	0.42	-0.45		2.63	0.63	0.64
<b>Total Tangible Assets-Factory</b>	<b>11907.39</b>	<b>711.23</b>	<b>68.07</b>	<b>12550.55</b>	<b>8021.17</b>	<b>878.02</b>	<b>-47.26</b>	<b>1.54</b>	<b>8851.93</b>	<b>3700.16</b>	<b>3888.46</b>
<b>(ii) Intangible Assets</b>											
<b>-Internally developed</b>											
Software	0.65	0.01		0.66	0.60				0.60	0.06	0.05
Others	70.51	23.99		94.50	48.76	12.43	8.80		69.99	24.51	21.75
<b>-Others</b>											
Software	160.57	3.10	0.01	163.66	141.69	11.97	-0.03		153.63	10.03	18.88
Technical Know-how	188.50	8.82		197.32	79.36	20.97	-0.58		99.75	97.57	109.14
Others	24.20		8.80	15.40	13.93	3.85	-8.80		8.98	6.42	10.27
<b>Total intangible Assets-Factory</b>	<b>444.43</b>	<b>35.92</b>	<b>8.81</b>	<b>471.54</b>	<b>284.34</b>	<b>49.22</b>	<b>-0.61</b>		<b>332.95</b>	<b>138.59</b>	<b>160.09</b>
<b>Total of Factory Assets</b>	<b>12351.82</b>	<b>747.15</b>	<b>76.88</b>	<b>13022.09</b>	<b>8305.51</b>	<b>927.24</b>	<b>-47.87</b>	<b>1.54</b>	<b>9184.88</b>	<b>3838.75</b>	<b>4048.55</b>

## Note 10.1

## Fixed Assets

(₹ in Crore)

	Gross Block				Depreciation					Net Block	
	Cost As at 31.03.2015	Additions/ adjustments during the year	Deductions/ adjustments during the year	Cost As at 31.03.2016	Accumulated Depreciation/ Amortisation as at 31.03.2015	Depreciation for the year	Depreciation Adjustment	Lease Adjustment Account as at 31.03.2016	Accumulated Depreciation/ Amortisation as at 1.03.2016	As at 31.03.2016	As at 31.03.2015
<b>Township/ Residential</b>											
<b>Tangible assets</b>											
Freehold land (incl. development exp.)	2.54			2.54						2.54	2.54
Leasehold land (incl. development exp.)	11.68	41.40		53.08	0.78	0.22			1.00	52.08	10.90
Roads, bridges and culverts	7.81	0.06		7.87	5.94	1.84	-1.13		6.65	1.22	1.87
Buildings	221.70	14.65	5.53	230.82	84.73	5.99			90.72	140.10	136.97
Leasehold buildings	0.27			0.27	0.27	0.06	-0.06		0.27		
Drainage, sewerage and water supply	22.73	4.22	0.01	26.94	15.87	1.00	-0.45		16.42	10.52	6.86
Plant and Machinery	26.27	1.16	0.06	27.37	16.18	1.73	0.43		18.34	9.03	10.09
Electronic Data Processing Equipment	0.05	0.01		0.06	0.02	0.67	-0.65		0.04	0.02	0.03
Electrical installations	21.66	1.24		22.90	16.97	0.63	0.58		18.18	4.72	4.69
Vehicles	0.92			0.92	0.90	0.02	-0.01		0.91	0.01	0.02
Furniture & fixtures	1.55	0.91	0.05	2.41	0.87	0.58	-0.31		1.14	1.27	0.68
Office & other equipment	26.82	1.84	0.76	27.90	20.28	2.35	-0.40		22.23	5.67	6.55
Fixed assets costing upto ₹ 10000/-	3.13	0.22		3.35	3.13	0.12	0.10		3.35		
Assets taken on lease											
- EDP Equipment		0.52		0.52		0.08			0.08	0.44	
<b>Total Tangible Assets-Township</b>	<b>347.13</b>	<b>66.23</b>	<b>6.41</b>	<b>406.95</b>	<b>165.94</b>	<b>15.29</b>	<b>-1.90</b>		<b>179.33</b>	<b>227.62</b>	<b>181.20</b>
<b>Total of Township Assets</b>	<b>347.13</b>	<b>66.23</b>	<b>6.41</b>	<b>406.95</b>	<b>165.94</b>	<b>15.29</b>	<b>-1.90</b>		<b>179.33</b>	<b>227.62</b>	<b>181.20</b>
<b>Total of Tangible Assets</b>	<b>12254.52</b>	<b>777.46</b>	<b>74.48</b>	<b>12957.50</b>	<b>8187.11</b>	<b>893.31</b>	<b>-49.16</b>	<b>1.54</b>	<b>9031.26</b>	<b>3927.78</b>	<b>4069.66</b>
<b>Total of Intangible Assets</b>	<b>444.43</b>	<b>35.92</b>	<b>8.81</b>	<b>471.54</b>	<b>284.34</b>	<b>49.22</b>	<b>-0.61</b>		<b>332.95</b>	<b>138.59</b>	<b>160.09</b>
<b>Total of Factory &amp; Township</b>	<b>12698.95</b>	<b>813.38</b>	<b>83.29</b>	<b>13429.04</b>	<b>8471.45</b>	<b>942.53</b>	<b>-49.77</b>	<b>1.54</b>	<b>9364.21</b>	<b>4066.37</b>	<b>4229.75</b>
<b>Previous year</b>	<b>12102.94</b>	<b>689.23</b>	<b>93.22</b>	<b>12698.95</b>	<b>7376.38</b>	<b>1082.01</b>	<b>13.06</b>	<b>2.25</b>	<b>8471.45</b>	<b>4229.75</b>	<b>4729.40</b>

Gross Block as at 31.03.2016 includes assets condemned and retired from active use ₹ **98.92 Crore** (Previous year ₹ 122.20 Crore)

Net Block as at 31.03.2016 includes assets condemned and retired from active use ₹ **0.37 Crore** (Previous year ₹ 1.31 Crore)

Gross Block excludes cost of assets purchased out of grant received from Govt of India for research as executing agency since the property does not vest with the Company.

	2015-16	2014-15
₹ In Crore	<b>49.31</b>	49.16

There is no impairment loss in fixed assets during the year.

Change due to shareholding in RPCL has been included in respective adjustment columns.

Gross Block includes ₹ **120.19 Crore** (previous year Rs 99.17 Crore) share of joint controlled entities.

Depreciation for the year includes ₹ **5.94 Crore** (Previous Year 3.69 Crore) Share of joint controlled entities.

## 11 - Non-current investments

(₹ in Crore)

	Figures as at 31.03.2016		Figures as at 31.03.2015	
<b>Long Term Investments (at cost)</b>				
<b>Unquoted Shares(Fully paid up):</b>				
<b><u>TRADE:</u></b>				
1892 (previous year 1892) Equity shares of ₹10/- each (Previous year ₹ 10 each) of Engineering Projects (India) Ltd.	*		*	
728960 (previous year 728960) Equity shares of ₹ 10/- each of AP Gas Power Corporation Ltd.	0.91		0.91	
5000000 (Previous year 5000000) Equity shares of ₹10/- each of Neelachal Ispat Nigam Ltd.	5.00	5.91	5.00	5.91
<b>Joint Ventures Companies</b>				
1999999 (previous year 1999999) Equity Shares of ₹ 10/- each of Powerplant Performance Improvement Ltd.	2.00		2.00	
Less: Provision for diminution in value	2.00	0.00	2.00	0.00
<b><u>OTHER THAN TRADE:</u></b>				
250 shares of ₹10/- each of BHPV Employees Consumers Cooperative Stores Ltd.		*		*
10 shares of ₹50/- each of Cuffe Parade Persopolis Premises Cooperative Society Ltd., Mumbai		*		*
20 shares of ₹50/- each of Hill View Cooperative Housing Society Ltd., Mumbai		*		*
Share money paid in advance to M/s. Rita Enterprises, Mumbai for allotment of 50 shares of ₹ 10 each		*		*
Share money paid in advance to M/s. Asish Enterprises, Mumbai for allotment of 50 shares of ₹ 10 each		*		*
* Value of less than Rs 1 lakh/-				
		<u>5.91</u>		<u>5.91</u>
<b>Aggregate value of unquoted investments</b>		5.91		5.91
<b>Aggregate provision in diminution in value of investments</b>		2.00		2.00

## 12 - Deferred tax assets (Net)

(₹ in Crore)

	Figures as at 31.03.2016	Figures as at 31.03.2015
Provisions	2352.84	1317.02
Statutory dues	680.55	609.47
Adjustment as per Sec 145A		2.88
Others	10.27	12.03
Depreciation	102.26	56.38
	<u>3145.92</u>	<u>2229.42</u>
Deferred Tax Liabilities	-	-
<b>Deferred tax assets (net)</b>	<u>3145.92</u>	<u>2229.42</u>
Includes ₹ 7.61 Crore (previous year ₹ 6.20 crore) share of jointly controlled entities.		

## 13 - Long-term loans and advances

(₹ in Crore)

	Figures as at 31.03.2016	Figures as at 31.03.2015
Loans to employees	0.27	0.28
Loans to Public Sector Undertakings (Bharat Pumps and Compressor Ltd. For capital investment)	0.00	4.00
Interest accrued and or due on loans	<u>0.15</u> <u>0.42</u>	<u>0.26</u> <u>4.54</u>
<b>Sub classification:-</b>		
Secured, considered good ₹ 0.04 Crore (previous year ₹ 4.02 Crore)		
Unsecured, considered good ₹ 0.38 Crore (previous year ₹ 0.52 Crore)		
<b>Advances (Recoverable in cash or in kind or for value to be received)</b>		
For purchases	79.62	336.11
Capital advance	78.39	89.80
To Others	<u>57.89</u> <u>215.90</u>	<u>57.95</u> <u>483.86</u>
<b>Sub classification:-</b>		
Unsecured, considered good ₹ 204.30 Crore (previous year ₹ 471.18 Crore)		
Doubtful ₹ 11.60 crore (previous year ₹ 12.68 crore)		
<b>Deposits</b>		
Balance with customs, Port Trust and other Govt Authorities	93.92	78.33
Other Deposits	71.52	110.80
Advance Tax/TDS (Net of Provision for Taxation)	<u>602.55</u> <u>767.99</u>	<u>644.13</u> <u>833.26</u>
<b>Sub classification:-</b>		
Unsecured, considered good ₹ 744.36 Crore (previous year ₹ 802.88 Crore)		
Doubtful ₹ 23.63 Crore (previous year ₹ 30.38 Crore)		
<b>Less: Provisions for doubtful advances and deposits</b>	<u>35.23</u>	<u>43.06</u>
	<u>949.08</u>	<u>1278.6</u>
Due from Directors	-	-
Due from Officers	-	0.01
Includes ₹ 48.82 Crore (previous year ₹ 93.53 crore) share of jointly controlled entities.		



## 14 - Other non-current assets

(₹ in Crore)

	Figures as at 31.03.2016		Figures as at 31.03.2015	
Long term trade receivables	15499.51		14766.04	
Less : Provision for bad & doubtful debts	3823.86		2957.39	
Less : Automatic price reduction adjustment a/c	429.20	11246.45	361.25	11447.40
		<u>11246.45</u>		<u>11447.40</u>

### Sub classification: Long term trade receivables

Unsecured, considered good ₹ **11246.45 crore** (previous year ₹ 11447.40 crore)

Doubtful ₹ **4253.06 crore** (previous year ₹ 3318.64 crore )

Long term trade receivables include deferred debts-

- ₹ **10563.54 crore** (previous year ₹ 10219.60 crore)

Includes ₹ **71.44 Crore** (previous year ₹ 32.95 crore) share of jointly controlled entities

## 15 - Inventories

(₹ in Crore)

	Figures as at 31.03.2016		Figures as at 31.03.2015	
Raw material & components	3894.87		4091.54	
Material-in-transit	557.78	4452.65	469.09	4560.63
Work-in-progress		3257.46		3213.66
(including items with sub-contractors)				
Finished goods	1571.53		1746.35	
Inter division transfers in transit	134.32	1705.85	201.99	1948.34
Stores & spare parts				
Production	217.07		227.19	
Fuel stores	6.19		5.50	
Miscellaneous	50.80	274.06	46.55	279.24
Materials with fabricators/contractors		93.86		145.17
Loose tools		33.71		35.28
Scrap (at estimated realisable value)		62.16		71.54
Less: Provision for non-moving inventory		222.46		136.99
		<u>9657.29</u>		<u>10116.87</u>

Refer to Significant accounting policy No. 9 regarding mode of valuation

Includes ₹ **13.61 Crore** (previous year ₹ 4.95 crore) share of jointly controlled entities.

## 16 - Trade receivables

(₹ in Crore)

	Figures as at 31.03.2016	Figures as at 31.03.2015
Debts outstanding for a period exceeding six months	17776.84	15473.64
Particulars of trade receivables :		
Unsecured, considered good ₹ 14844.93 crore (previous year ₹ 13745.09 crore)		
Doubtful ₹ 2931.91 crore (previous year ₹ 1728.55 crore )		
Other debts	10018.08	12812.63
Particulars of trade receivables :		
Unsecured, considered good ₹ 9912.55 crore (previous year ₹ 12775.03 crore)		
Doubtful ₹ 105.53 crore (previous year ₹ 37.60 crore )		
	27794.92	28286.27
Less : Provision for bad & doubtful debts & automatic price reduction adjustment	3037.44	1766.15
	24757.48	26520.12
Trade receivables include deferred debts-		
– ₹ 8055.32 crore (previous year ₹ 7065.22 crore)		
Trade receivables include goods despatched pending billing-		
– ₹ 682.94 crore (previous year ₹ 1192.30 crore)		
Trade receivables include valuation adjustment-		
– ₹ 1354.23 crore (previous year ₹ 1740.94 crore)		
Includes ₹ 319.73 Crore (previous year ₹ 294.19 crore) share of jointly controlled entities.		

## 17 - Cash &amp; bank balances

(₹ in Crore)

	Figures as at 31.03.2016	Figures as at 31.03.2015
<b>Cash &amp; cash equivalents</b>		
Balances with Banks*	1559.65	2611.63
Cheques, Demand Drafts on hand	416.45	290.74
Cash & Stamps in on hand	0.50	0.60
Remittances in transit	0.02	-
<b>Other Bank Balances</b>		
Fixed Deposit having maturity more than 3 months & less than 12 months	8221.87	7045.10
Fixed Deposit having maturity more than 12 months	0.00	0.83
	10198.49	9948.90
<b>*Includes</b>		
Earmarked against unclaimed dividend	3.27	3.72
Non-repatriable account	4.28	4.11
Includes ₹ 111.30 Crore (previous year ₹ 135.94 crore) share of jointly controlled entities.		

## 18 - Short-term loans and advances

(₹ in Crore)

	Figures as at 31.03.2016		Figures as at 31.03.2015	
<b>Loans</b>				
Loans to employees	0.24		0.19	
Loans to Public Sector Undertakings (Bharat Pumps and Compressor Ltd. For capital investment)	12.00		8.00	
Interest accrued and or due on loans	2.63	14.87	1.93	10.12
<b>Sub classification:-</b>				
Secured, considered good ₹ 12.02 Crore (previous year ₹ 8.04 Crore)				
Unsecured, considered good ₹ 2.85 Crore (previous year ₹ 2.08 Crore)				
<b>Advances (Recoverable in cash or in kind or for value to be received)</b>				
To subsidiaries	0.28		0.59	
To employees	36.11		39.83	
For purchases	504.55		507.78	
To Others	1177.78	1718.72	1208.12	1756.32
<b>Sub classification:-</b>				
Secured, considered good ₹ 0.54 Crore (previous year ₹ 0.54 Crore)				
Unsecured, considered good ₹ 1620.04 Crore (previous year ₹ 1671.27 Crore)				
Doubtful ₹ 98.14 Crore (previous year ₹ 84.51 Crore)				
<b>Deposits</b>				
Balance with customs, Port Trust and other Govt Authorities	510.19		495.80	
Others	191.42	701.61	129.84	625.64
<b>Sub classification:-</b>				
Unsecured, considered good ₹ 678.54 Crore (previous year ₹ 597.02 Crore)				
Doubtful ₹ 23.07 Crore (previous year ₹ 28.62 Crore)				
<b>Less: Provisions for doubtful advances and deposits</b>		121.21		113.13
		2313.99		2278.95
Includes:				
Due from Directors		-		-
Due from Officers		0.12		0.14
Includes ₹ 61.20 Crore (previous year ₹ 58.08 crore) share of jointly controlled entities.				

## 19 - Other current assets

(₹ in Crore)

	Figures as at 31.03.2016	Figures as at 31.03.2015
Interest Accrued on Banks Deposits	124.01	176.51
Other Current Assets	-	-
	124.01	176.51

Includes ₹ 1.92 Crore (previous year ₹ 3.15 crore) share of jointly controlled entities.

## 20 - Revenue from operations

(₹ in Crore)

	Figures for the current year ended 31.03.2016	Figures for the previous year ended 31.03.2015
Sales less returns	22453.28	25012.29
Income from external erection & other services & revenue from works contract	4860.72	6542.47
	<u>27314.00</u>	<u>31554.76</u>

Includes ₹ **688.05 Crore** (previous year ₹ 590.65 crore) share of jointly controlled entities.

## 21 - Other operational income

(₹ in Crore)

	Figures for the current year ended 31.03.2016	Figures for the previous year ended 31.03.2015
Export Incentives	34.24	100.32
Rental income on leased assets	0.93	0.93
Lease equalisation account	<u>-0.71</u> 0.22	<u>-0.60</u> 0.33
Scrap sale	158.62	243.99
Receipt from sale/transfer of surplus stock	0.03	0.06
Others	299.84	355.53
	<u>492.95</u>	<u>700.23</u>

Includes ₹ **Nil** (previous year ₹ Nil Crore) share of jointly controlled entities.

## 22 - Other income

(₹ in Crore)

	Figures for the current year ended 31.03.2016	Figures for the previous year ended 31.03.2015
<b>A. Other income</b>		
Profit from sale of fixed assets & capital stores (net)	5.75	5.74
Dividend	34.15	29.8
Exchange variation ( net)	356.55	0.00
Others (including grants of ₹ <b>Nil</b> (previous year ₹ Nil crore) from Govt of India for R & D Projects)	291.42	374.03
<b>Total (A)</b>	<u>687.87</u>	<u>409.57</u>
<b>B. Interest Income*</b>		
From customers	0.00	0.07
From banks	694.35	808.15
Others	77.38	12.8
<b>Total (B)</b>	<u>771.73</u>	<u>821.02</u>
<b>Total Other Income</b>	<u>1459.60</u>	<u>1230.59</u>

Includes ₹ **9.58 Crore** (previous year ₹ 10.13 crore) share of jointly controlled entities.

## 23 - Cost of material consumption, erection and engineering expenses

(₹ in Crore)

	Figures for the current year ended 31.03.2016	Figures for the previous year ended 31.03.2015
Consumption of raw material & components	13629.34	14198.83
Consumption of stores & spares	426.31	475.57
Erection and engineering exp. - payment to subcontractors	2992.22	3604.10
	<u>17047.87</u>	<u>18278.50</u>

Includes ₹ 620.17 Crore (previous year ₹ 509.42 crore) share of jointly controlled entities.

## 24 - Increase/(Decrease) in work in progress & finished goods

(₹ in Crore)

	Figures for the current year ended 31.03.2016	Figures for the previous year ended 31.03.2015
<b>Work-in-Progress</b>		
Closing Balance	3257.46	3213.66
Opening Balance	<u>3213.66</u>	<u>3016.38</u>
	43.80	197.28
<b>Finished Goods</b>		
Closing Balance	1571.53	1746.35
Opening Balance	<u>1746.35</u>	<u>1500.20</u>
	-174.82	246.15
<b>Inter-division transfer in transit</b>	-77.56	-103.93
	<u>-208.58</u>	<u>339.50</u>
<b>NOTE:</b>		
<b>Element of Excise duty in Finished Goods</b>		
Closing Balance	154.91	128.59
Opening Balance	<u>158.59</u>	<u>130.73</u>

Includes ₹ 1.47 Crore (previous year ₹ 0.25 crore) share of jointly controlled entities.

## 25 - Employees benefits expense

(₹ in Crore)

	Figures for the current year ended 31.03.2016	Figures for the previous year ended 31.03.2015
Salaries, wages, bonus, allowances & other benefits	4590.14	4522.77
Contribution to gratuity fund	127.22	89.56
Contribution to provident and other funds	340.09	337.77
Group insurance	11.59	11.94
Staff welfare expenses	498.45	513.44
	<u>5567.49</u>	<u>5475.48</u>

Includes ₹ 18.74 Crore (previous year ₹ 17.88 crore) share of jointly controlled entities.



## 26 - Finance cost

(₹ in Crore)

	Figures for the current year ended 31.03.2016	Figures for the previous year ended 31.03.2015
Interest expenses	27.21	91.99
Other Borrowing Costs	0.41	0.44
	27.69	92.43
Less: Borrowing Cost capitalised	0.00	0.00
	27.69	92.43

Includes ₹ 0.52 Crore (previous year ₹ 0.51 crore) share of jointly controlled entities.

## 27 - Other expenses of manufacture, administration, selling &amp; distribution

(₹ in Crore)

	Figures for the current year ended 31.03.2016	Figures for the previous year ended 31.03.2015
Royalty, technical, Resident consultant's charges & other consultancy charges	105.15	121.45
Rent	83.11	83.46
Excise duty	197.15	225.32
Power & Fuel	500.69	556.46
Rates & taxes	68.64	74.90
Service tax & Swachh Bharat Cess	15.24	9.94
Exchange variation (Net)	0.00	387.94
Insurance	136.45	123.37
Repairs:		
Buildings	90.69	88.30
Plant & machinery	43.37	44.06
Others	134.30	133.77
Other expenses in connection with exports	21.18	23.80
Losses written off	0.01	0.02
Bad debts written off	17.07	31.44
Carriage outward	371.67	391.75
Travelling & conveyance	149.85	168.25
Miscellaneous expenses	1107.67	1219.24
Liquidated damages charged off	7.25	31.18
Donations	0.00	0.01
	3049.49	3714.66

Includes ₹ 22.42 Crore (previous year ₹ 16.69 crore) share of jointly controlled entities.

## 28 - Provisions (net)

(₹ in Crore)

	Figures for the current year ended 31.03.2016		Figures for the previous year ended 31.03.2015	
<b>Doubtful debts ,Liquidated Damages and Loans &amp; advances</b>				
Created during the year	2834.77		1765.75	
Less: written back during the year	613.74	2221.03	804.40	961.35
<b>Contracutal Obligations</b>				
Created during the year	737.78		1048.61	
Less: written back during the year	693.21	44.57	568.41	480.20
<b>Others</b>				
Created during the year	428.29		494.93	
Less: written back during the year	240.19	188.10	331.81	163.12
		<u>2453.70</u>		<u>1604.67</u>

Includes ₹ 9.38 Crore (previous year ₹ -0.84 crore) share of jointly controlled entities.

## 29 - Prior period adjustment (net)

(₹ in Crore)

	Figures for the current year ended 31.03.2016		Figures for the previous year ended 31.03.2015	
<b>Income</b>				
Sales less returns	-5.34		-10.35	
Other income	1.24	-4.10	0.66	-9.69
<b>Expenditure</b>				
Payment to Subcontractor	1.76		0.66	
Depreciation	0.08		0.33	
Misc. Expenses	-0.04	1.80	-0.39	0.60
		<u>-5.90</u>		<u>-10.29</u>

Includes ₹ Nil Crore (previous year ₹ Nil Crore) share of jointly controlled entities.

## 30 - Tax expense

(₹ in Crore)

	Figures for the current year ended 31.03.2016		Figures for the previous year ended 31.03.2015	
<b>a) Current tax</b>				
For current year	372.65		1023.13	
For earlier years	-5.24	367.41	-54.26	968.87
<b>b) Deferred tax charge / (credit)</b>				
For current year	-904.24		-342.05	
For earlier years	-12.26	-916.50	110.03	-232.02
		<u>-549.09</u>		<u>736.85</u>

Includes ₹ 15.18 Crore (previous year ₹ 17.61 crore) share of jointly controlled entities.

## Significant Accounting Policies

(Consolidated Financial Statement)

### 1. Basis of preparation of Financial Statements

The financial statements have been prepared as of a going concern on historical cost convention and on accrual method of accounting in accordance with the generally accepted accounting principles and the provisions of the Companies Act, 2013 as adopted consistently by the Company.

### 2. Use of estimates

The preparation of financial statements in conformity with generally accepted accounting principles requires the Management to make estimates and assumptions that affect the income and expenditure during the reporting period and the assets and liabilities including contingent liabilities at the date of financial statements. The differences between actual results and estimates are recognized in the period in which results are known.

### 3. Fixed Assets

- (a) Fixed assets (other than land acquired free from State Government) are carried at the cost of acquisition or construction or book value less accumulated depreciation and impairment, if any.
- (b) Cost includes value of internal transfers for capital works, taken at actual / estimated factory cost or market price, whichever is lower. Effect of extraordinary events such as devaluation/ revaluation in respect of long term liabilities / loans utilized for acquisition of fixed assets is added to / reduced from the cost.
- (c) Land acquired free of cost from the State Government is valued at Re.1/- except for that acquired after 16th July 1969, in which case the same is valued at the acquisition price of the State Government concerned, by corresponding credit to capital reserve.

### 4. Leases

#### Finance Lease

#### A) i) Assets Given on Lease Prior to 1<sup>st</sup> April, 2001

Assets manufactured and given on finance lease are capitalized at the

normal sale price/fair value/contracted price and treated as sales.

Depreciation on the same is charged at the rate applicable to similar type of fixed assets as per Accounting Policy on 'Depreciation'. Against lease rentals, matching charge is made through Lease Equalization Account.

Finance income is recognized over the lease period.

#### (ii) Assets Given on Lease on or after 1<sup>st</sup> April, 2001

Assets manufactured and given on finance lease are recognized as sales at normal sale price / fair value / NPV.

Finance income is recognized over the lease period.

Initial direct costs are expensed at the commencement of lease.

#### B) Assets Taken on Lease on or after 1<sup>st</sup> April, 2001

Assets taken on lease are capitalized at fair value / NPV / contracted price.

Depreciation on the same is charged at the rate applicable to similar type of fixed assets as per Accounting Policy on 'Depreciation'. If the lease assets are returnable to the lesser on expiry of lease period, the same is depreciated over its useful life or lease period, whichever is shorter.

Lease payments made are apportioned between finance charges and reduction of outstanding liability in relation to assets taken on lease.

#### Operating Lease

#### A) Assets Given on Lease

Assets manufactured and given on operating lease are capitalized. Lease income arising there from is recognized as income over the lease period.

#### B) Assets Taken on Lease

Lease payments made for assets taken on operating lease are recognized as expense over the lease period.

## 5. Intangible Assets

### A) Intangible assets are capitalized at cost if

- it is probable that the future economic benefits that are attributable to the asset will flow to the company, and
- the company will have control over the assets, and
- the cost of these assets can be measured reliably and is more than ₹10,000/-

Intangible assets are amortized over their estimated useful lives not exceeding three years in case of software and not exceeding ten years in case of others on a straight line pro-rata monthly basis.

- ### B)
- Expenditure on research including the expenditure during the research phase of Research & Development Projects is charged to statement of profit and loss in the year of incurrence.
  - Expenditure incurred on Development including the expenditure during the development phase of Research & Development Project meeting the criteria as per Accounting Standard on Intangible Assets, is treated as intangible asset.
  - Fixed assets acquired for purposes of research and development are capitalized.

## 6. Borrowing Costs

Borrowing costs that are attributable to the manufacture, acquisition or construction of qualifying assets, are included as part of the cost of such assets.

A qualifying asset is one that necessarily takes more than twelve months to get ready for intended use or sale.

Other borrowing costs are recognized as expense in the period in which they are incurred.

## 7. Depreciation

- Depreciation on fixed assets (other than those used abroad under contract) is charged upto the total cost of the assets on straight-line method as per the useful life prescribed in Schedule II of the Companies Act, 2013, except where estimated useful

life is shorter based on technically assessed estimated useful life as shown hereunder:-

	(Years)
General plant & machinery	12.5
Automatic/semi- automatic machines	10
Erection equipment, Capital tools & tackles	5
Railway sidings, Locomotives & wagons	12.5
Drainage, sewerage & water supply	30
Servers and networks	5

In respect of additions to/deductions from the fixed assets, depreciation is charged on pro-rata monthly basis.

- Where useful life of a part of the asset (costing at least ₹ 1 Crore or 10% of the cost of the asset, whichever is higher) is different from the useful life of the remaining asset, useful life of that part is determined separately and depreciation charged accordingly.
- Fixed assets used outside India pursuant to long term contracts are depreciated over the duration of the initial contract.
- Fixed assets costing ₹10,000/- or less and those whose written down value as at the beginning of the year is ₹10,000/- or less, are depreciated fully. In so far as township buildings are concerned, the cost per tenement is the basis for the limit of ₹10,000/-.
- At erection/project sites: The cost of roads, bridges and culverts is fully amortized over the tenure of the contract, while sheds, railway sidings, electrical installations and other similar enabling works (other than temporary structures) are so depreciated after retaining 5% as residual value.
- Temporary structures are fully depreciated in the year of construction.
- Leasehold Land and Buildings are amortised over the period of lease. Buildings constructed on land taken on lease are depreciated over their useful life or the lease period, whichever is earlier.

### In the case of BHEL-GE GAS TURBINE SERVICES PVT. LTD.

Depreciation is provided on pro-rata basis on the straight line method over the estimated useful life of the assets, which are equal/lower than the rates prescribed under Schedule II of the Companies

Act, 2013. In order to reflect the actual usage of assets, the estimated useful lives of the assets is based on a technical evaluation.

<b>Asset category</b>	<b>Estimated useful life</b>
Plant and machinery	2-15
Electrical Installations	3-10
Civil Structures	5-10
Furniture and fixtures	1-8
Computers	3
Office equipment	3-5

Depreciation is charged on a proportionate basis for all assets purchased and sold during the year. Individual assets costing less than ₹ 5000/- each are depreciated fully in the year of purchase.

#### **In the case of RAICHUR POWER CORPORATION LIMITED**

Depreciation is provided on straight line method at the rates specified in the CERC Regulation 2009. In respect of assets for which rates are not specified in the CERC regulations, at the rates specified under Schedule II of the Companies Act, 2013.

Assets are depreciated to the extent of 90% of the cost and 10% is retained as residual value.

Depreciation on additions to assets is provided for the full year irrespective of the date of addition.

Depreciation is not charged on assets sold/dismantled in the year of sale/discard/dismantling.

Individual assets costing up to ₹ 5000 are fully depreciated in the year in which they are put to use.

#### **In the case of NTPC BHEL POWER PROJECTS PVT LTD**

Depreciation on fixed assets is charged on straight line method as per the rates prescribed in Schedule II of the Companies Act, 2013.

At erection/project sites: The cost of roads, bridges, culverts, sheds, railway sidings, electrical installations and other similar enabling works ( other than purely temporary erections, wooden structures) is fully amortized over the tenure of the contract.

#### **In the case of DADA DHUNIWALE KHANDWA POWER LIMITED**

Depreciation on fixed assets is provided on straight line basis at the rates and in the manner prescribed in schedule II to the Companies Act 2013.

## **8. Investments**

- (i) Long-term investments are carried at cost. Decline, other than temporary, in the value of such investments, is recognized and provided for.
- (ii) Current investments are carried at cost or quoted/fair value whichever is lower. Unquoted current investments are carried at cost.
- (iii) The cost of investment includes acquisition charges such as brokerage, fees and duties. Any reduction in the carrying amount & any reversals of such reductions are charged or credited to the statement of Profit and Loss.

## **9. Inventory Valuation**

- (i) Inventory is valued at actual/estimated cost or net realizable value, whichever is lower.
- (ii) Finished goods in Plant and work in progress involving Hydro and Thermal sets including gas based power plants, boilers, boiler auxiliaries, compressors and industrial turbo sets are valued at actual/estimated factory cost or at 97.5% of the realizable value, whichever is lower.
- (iii) In respect of valuation of finished goods in plant and work-in-progress, cost means factory cost; actual/estimated factory cost includes excise duty payable on manufactured goods.
- (iv) In respect of raw material, components, loose tools, stores and spares cost means weighted average cost.
- (v) a) For Construction contracts entered into on or after 01.04.2003:  
Where current estimates of cost and selling price of a contract indicates loss, the anticipated loss in respect of such contract is recognized immediately irrespective of whether or not work has commenced.
- b) For all other contracts:  
Where current estimates of cost and selling price of an individually identified project forming part of a contract indicates loss, the anticipated loss in respect of such project on which the work had commenced, is recognized.



- c) In arriving at the anticipated loss, total income including incentives on exports/deemed exports is taken into consideration.
- (vi) The components and other materials purchased / manufactured against production orders but declared surplus are charged off to revenue retaining residual value based on technical estimates.

**In the case of BHEL-GE GAS TURBINE SERVICES PVT. LTD.**

Traded stock is valued at the lower of cost and net realizable value. Cost is determined under the first-in-first-out method.

## 10. Revenue Recognition

Sales are recorded based on significant risks and rewards of ownership being transferred in favor of the customer. Sales include goods dispatched to customers by partial shipment.

**A) For construction contracts entered into on or after 1.4.2003**

Revenue is recognized on percentage completion method based on the percentage of actual cost incurred up to the reporting date to the total estimated cost of the contract.

**B) For all other contracts**

- (i) Recognition of sales revenue in respect of long production cycle items (Hydro and Thermal sets including gas-based power plants, boilers, boiler auxiliaries, compressors and industrial turbo sets) is made on technical estimates. When the aggregate value of shipments represents 30% or more of the realizable value, they are considered at 97.5% of the realizable value or in its absence, quoted price. Otherwise, they are considered at actual/estimated factory cost or 97.5% of the realizable value, whichever is lower. The balance 2.5% is recognized as revenue on completion of supplies under the contract.
- (ii) Income from erection and project management services is recognized on work done based on:  
  
Percentage of completion; or  
  
The intrinsic value, reckoned at 97.5% of contract value, the balance 2.5% is recognized as income when the contract is completed.

- (iii) Income from engineering services rendered is recognized at realizable value based on percentage of work completed.
- (iv) Income from supply/erection of non-BHEL equipment/systems and civil works is recognized based on dispatches to customer/work done at project site.

## 11. Accounting for Foreign Currency Transactions

Transactions in foreign currencies are recorded at the exchange rates prevailing on the date of the transaction. Foreign currency monetary assets and liabilities are translated at year end exchange rates. Exchange difference arising on settlement of transactions and translation of monetary items are recognized as income or expense in the year in which they arise.

## 12. Translation of Financial Statements of Integral Foreign Operations

- (i) Items of income and expenditure are translated at average rate except depreciation, which is converted at the rates adopted for the corresponding fixed assets.
- (ii) Monetary items are translated at the closing rate; non-monetary items carried at historical cost are translated at the rates in force on the date of the transaction; non-monetary items carried at fair value are translated at exchange rates that existed when the value were determined.
- (iii) All translation variances are taken to statement of Profit and Loss

## 13. Employee Benefits

Provident Fund and Employees' Family Pension Scheme contributions are accounted for on accrual basis. Liability for Earned Leave, Half Pay Leave, Gratuity, Travel claims on retirement and Post Retirement Medical Benefits are accounted for in accordance with actuarial valuation. Compensation under Voluntary Retirement Scheme is charged off in the year of incurrence on a pro-rata monthly basis.

**In the case of NTPC BHEL POWER PROJECTS PVT LTD.**

In respect of employees seconded/deputed from NTPC/BHEL, company's contribution towards employee benefits is determined as a percentage of pay under an agreement, and is recognized in the Statement of Profit and Loss.

## 14. Claims by /against the Company

- (i) Claims for liquidated damages against the Company are recognized in accounts based on management's assessment of the probable outcome with reference to the available information supplemented by experience of similar transactions.
- (ii) Claims for export incentives/duty drawbacks/ duty refunds and insurance claims etc. are taken into account on accrual.
- (iii) Amounts due in respect of price escalation claims and/or variations in contract work are recognized as revenue only when there are conditions in the contracts for such claims or variations and/or evidence of the acceptability of the same from customer. However, escalation is restricted to intrinsic value.

## 15. Provision for Warranties

- (i) **For construction contracts entered into on or after 01.04.2003:**

The company provides warranty cost at 2.5% of the revenue progressively as and when it recognises the revenue and maintain the same through the warranty period.

- (ii) **For all other contracts:**

Provision for contractual obligations in respect of contracts under warranty at the year end is maintained at 2.5% of the value of contract. In the case of contracts for supply of more than a single product 2.5% of the value of each completed product is provided.

- (iii) Warranty claims/ expenses on rectification work are accounted for against natural heads as and when incurred and charged to provisions in the year end.

## 16. Government Grants

Government Grants are accounted when there is reasonable certainty of their realization.

Grants related to fixed depreciable assets are adjusted against the gross cost of the relevant assets while those related to non-depreciable assets are credited to capital reserve.

Grants related to revenue, unless received as compensation for expenses/losses, are recognized as revenue over the period to which these are related on the principle of matching costs to revenue. Grants in the form

of non-monetary assets are accounted for at the acquisition cost, or at nominal value if received free.

## 17. Taxes on income

Current tax is determined on the basis of taxable income in accordance with the provisions of the Income Tax Act, 1961. Deferred tax liability/ asset resulting from timing difference between accounting income and taxable income is recognised considering the tax rate and laws that have been enacted or substantively enacted as on the balance sheet date. Deferred tax asset is accounted for and carried forward only to the extent that there is reasonable certainty that sufficient future taxable income will be available against which such deferred tax assets can be realised. Deferred tax assets in respect of unabsorbed depreciation and carry forward of losses are recognised only if there is virtual certainty that there will be sufficient future taxable income available to realise such assets.

## 18. Impairment

The carrying amount of cash generating units is reviewed at each balance sheet date where there is any indication of impairment. An impairment loss is recognised in the statement of profit and loss where the carrying amount exceeds the recoverable amount of the cash generating units. An impairment loss is reversed if there is change in the recoverable amount and such loss either no longer exists or has decreased.

## 19. Segment Reporting

Segment reporting is in line with the accounting policies of the company. Revenue and expenses are identified to segments on the basis of their relationship to the operating activities of the segment. Revenue, expenses, assets and liabilities which are not allocable to segments on a reasonable basis, are included under "Unallocated revenue / expenses / assets / liabilities".

## 31 - Other notes to Consolidated Financial Statements

- 1 The Consolidated Financial Statements relate to Bharat Heavy Electricals Limited (the company), its Subsidiary and its interest in Joint Venture entities. The consolidated Financial Statements have been prepared on the following basis:-

Basis of Accounting:

- The financial statements of the subsidiary company and interest in joint ventures in the consolidation are drawn upto the same reporting date as of the parent company.
- The consolidated financial statements have been prepared in accordance with Accounting Standard -21 on "Consolidated Financial Statements" and Accounting Standard - 27 on "Financial Reporting of interest in Joint Ventures".

Principles of Consolidation:

- The Financial Statements of the Parent Company and its Subsidiary company have been combined on a line-by-line basis by adding together the book values of like items of assets, liabilities, income and expenses after fully eliminating the intra-group balances and intra-group transactions and unrealized profits or losses in accordance with Accounting Standard - 21 on "Consolidated Financial Statements".
- The financial statements of Joint Venture entities have been combined by applying proportionate consolidation method on a line by line basis on items of assets, liabilities, income and expenses in accordance with Accounting Standard- 27 on "Financial Reporting of Interests in Joint Ventures".
- The consolidated financial statements have been prepared using uniform accounting policies for like transactions and other events in similar circumstances and are presented to the extent possible, in the same manner as the Parent Company's separate financial statements except as otherwise stated in the Significant Accounting Policies.
- Minority interest' share of net loss of consolidated subsidiary for the year is adjusted against the income of the group in order to arrive at the net income attributable to shareholder of the Company.
- Minority interest share of net liabilities of consolidated subsidiary is identified and presented in consolidated balance sheet separate from assets/liabilities & equities of the company shareholder.

2 **The Consolidated Financial Statements includes the result of following entities:**

Name of Company	Country of Incorporation	Proportion (%) of Shareholding as on 31.03.2016	Proportion (%) of Shareholding as on 31.03.2015
<b>Subsidiary Company</b>			
1) BHEL Electrical Machines Ltd. (BHEL EML)	India	51	51
<b>Joint Venture Companies</b>			
1) BHEL-GE Gas Turbine Services Ltd.	India	one share less than 50%	one share less than 50%
2) NTPC-BHEL Power Projects Pvt. Ltd.	India	50	50
3) Dada Dhuniwale Khandwa Power Limited	India	50	50
4) Raichur Power Corporation Limited	India	27.34	23.54

- The financial statements of BHEL EML are consolidated based on the audited financial statement for the year ended on 31.03.2016.

- (b) Interest in Joint Ventures in respect of Power Plant Performance Improvement Ltd. (PPIL) and Latur Power Company Ltd. have not been considered in preparation of Consolidated Financial Statements as the companies are under liquidation. Full amount of equity investment in M/S PPIL has been provided for as diminution in the value of investment. The amount of investment of ₹ 2.50 Crore wrt Latur Power Company Ltd. has been received back.
- (c) Interest in Joint Ventures in respect of NTPC BHEL Power Projects Private Limited, Dada Dhuniwale Khandwa Power Limited and Raichur Power Corporation Ltd. is considered based on unaudited financial statements for the year ended on 31.03.2016.
- (d) Interest in Joint Ventures in respect of BHEL-GE Gas Turbine Services Ltd. is considered based on audited financial statements for the year ended on 31.03.2016.

3 Capital & other commitments		2015-2016	2014-2015
Estimated amount of contracts, net of advances, remaining to be executed on capital account and not provided for		₹ Crore	
		<b>1527.93</b>	403.48
The above includes for acquisition of intangible assets		₹ Crore	
		<b>0.82</b>	8.00
4 Land and buildings includes			
a) (i) Acres of land for which formal transfer/ lease deed have not been executed	Acres	<b>8933.27</b>	8939.61
Net Block of above	₹ Crore	<b>72.62</b>	74.20
(ii) Number of flats for which formal transfer/ lease deed have not been executed	Nos.	<b>12.00</b>	12.00
Net Block of above	₹ Crore	<b>1.33</b>	1.37
(iii) Number of buildings for which formal transfer/ lease deed have not been executed	Nos.	<b>0.00</b>	0.00
Net Block of above	₹ Crore	<b>0.00</b>	0.00
(iv) Acres of land for which the cost paid is provisional; registration charges and stamp duty (net of provision already made), if any, would be accounted for on payment.	Acres	<b>528.18</b>	528.18
Net Block of above	₹ Crore	<b>67.09</b>	67.81
b) Acres of land leased to Ministry of Defence, Govt. of India Departments & others	Acres	<b>30.60</b>	30.60
c) Acres of land being used by Ministry of Defence and for which further approval of the competent authority for continuance of licencing of this land is awaited.	Acres	<b>180.00</b>	180.00
d) Acres of land is under adverse possession/encroachment	Acres	<b>811.72</b>	586.05
e) 1242.71 acres (P.Y. 1242.71 acres) of land pending mutation at Haridwar			
(It includes land measuring 878.85 acres which is in BHEL's possession but has been wrongly got mutated by SIDCUL in favour of Uttarakhand Government against which action is in progress for restoration of BHEL's name in Revenue Records)			
(Cost of land mentioned above in 4 (b),( c) (d) & (e) is not material)			

S. No.	Description		2015-16	2014-15
5	The impact on the profit of providing 100 percent depreciation on fixed assets upto ₹10,000/- each, without considering such impact of earlier years, is as under :			
	100% depreciation on assets upto ₹10,000/- charged off			
	in the accounting year.	₹ Crore	8.50	8.27
	Normal depreciation on above.	₹ Crore	2.46	1.42
	Excess amount charged.	₹ Crore	6.04	6.85
6	Revenue from operations			
a	Includes based on provisional prices	₹ Crore	47.20	56.23
b	Includes additional claim for despatches made in earlier years in accordance with price settlement with railways during the year.	₹ Crore	204.05	0.00
c	Includes for escalation claims raised in accordance with sales contracts, inclusive of escalation claims on accrual basis, to the extent latest indices were available;	₹ Crore	1051.47	1232.54
d	Includes despatches of equipment held on behalf of customers at their request for which payment has been received by Company ; and	₹ Crore	0.00	17.10
e	Excludes for price reduction (net of refund) due to delay in delivery as per the terms of the contract .	₹ Crore	32.20	45.43
7	Contingent liabilities :			
A	Claims against the company not acknowledged as debt :			
(i) a	Income Tax Pending Appeals	₹ Crore	1.89	16.50
b	Against which paid under protest included under the head "deposit "	₹ Crore	0.00	0.70
(ii) a	Sales Tax Demand	₹ Crore	1230.03	1519.87
b	Against which paid under protest included under the head "deposit "	₹ Crore	269.38	267.80
(iii) a	Excise Duty demands	₹ Crore	467.96	530.85
b	Against which paid under protest included under the head "deposit "	₹ Crore	23.59	23.40
(iv) a	Custom Duty demands	₹ Crore	0.10	2.93
b	Against which paid under protest included under the head "deposit "	₹ Crore	0.00	2.83
(v)	Court & Arbitration cases	₹ Crore	1029.32	874.56
(vi) a	Liquidated Damages	₹ Crore	7836.37	4107.19
b	Amount deducted by customers towards LD included in vi)a	₹ Crore	3161.77	2405.84
(vii)	Counter Claim by contractors	₹ Crore	0.61	4.76
(viii) a	Service Tax Demand	₹ Crore	488.36	461.37
b	Against which paid under protest	₹ Crore	7.34	4.46
(ix)	Others	₹ Crore	47.10	125.33
	(In view of the various court cases, litigations and claims disputed by the company, the outflow of resources is not ascertainable at this stage).			



- 8 a) Cash credit limit from banks aggregating to ₹ **5000 Crore** (previous year ₹ 5000 Crore) and Company's counter guarantee / indemnity obligations in regard to bank guarantee / letters of credit limit aggregating to ₹ **55000 Crore** (previous year ₹ 55000 Crore) sanctioned by the consortium banks are secured by first charge by way of hypothecation of raw materials, work-in-progress, finished goods, stores & spares book debts and other assets both present and future. The outstanding bank guarantees as at 31.03.2016 is ₹ **45937.79 Crore** (previous year ₹ 45018.65 Crore) which includes ₹ **103.79 Crore** (Previous year ₹ 103.65 Crore) on behalf of subsidiary & JV.
- b) Corporate Guarantees outstanding as on 31.03.2016 is ₹ **3028.33 Crore** (Previous year ₹ 2752.27 Crore)
- 9 Balances shown under Trade Receivables, Long term Trade receivable, Trade payables, contractors advances, deposits and stock/ materials lying with sub-contractors/ fabricators are subject to confirmation, reconciliation & consequential adjustment, if any. As the Company is in the business of long term construction contracts, bills are raised on the customers as per contract by the units located at various places as per the approved billing schedule by the customer and the reconciliation is carried out on ongoing basis & provisions made, wherever considered necessary. Final reconciliation with customer is being done on completion of project (Trial Operation and/ or PG Test completed). The total receivables (including long term) are ₹ 42886 Crore (including deferred debts & other debts of ₹ 20750 Crore presently not due for payment and ₹ 6002 Crore outstanding in respect of completed projects), out of which, the projects reconciled with customers have outstanding debts of ₹ 3998 Crore in respect of completed projects.
- 10 a) The disclosures relating to Construction Contracts entered on or after 01.04.2003 as per the requirement of Accounting Standard -7 (Revised) are as follows:

		<b>2015-16</b>	2014-15
Contract revenue recognised for the year	₹ Crore	<b>20632.52</b>	24667.65
In respect of Contract in progress at the end of year :			
The aggregate amount of Cost incurred and recognised profits (less recognised losses)	₹ Crore	<b>279622.46</b>	260748.35
Amount of advance received	₹ Crore	<b>5928.95</b>	6861.91
Amount of retentions (deferred debts)	₹ Crore	<b>20270.33</b>	18187.41
In respect of dues from customers after appropriate netting off			
Gross amount due from customer for the contract work as an asset	₹ Crore	<b>3755.10</b>	4451.62
Gross amount due to customer for the contract work as a liability	₹ Crore	<b>1575.83</b>	1590.01
Contingencies		-	-

- b) The estimates of total costs and total revenue in respect of construction contracts entered on or after 1<sup>st</sup> April 2003 in accordance with Accounting Standard (AS) -7 (R) Construction Contracts are reviewed and up dated periodically to ascertain the percentage completion for revenue recognition. However, it is impracticable to quantify the impact of change in estimates.
- 11 The disclosure relating to derivative instruments:
- a) The hedged derivative instruments outstanding as on 31.03.2016 is USD 0.21 crore wrt BGGTS (previous year USD 0.10 crore).
- b) The foreign currency exposures that are not hedged by a derivative instrument or otherwise are as under :

<b>a) Assets / Receivables</b>		<b>2015-16</b>	2014-15
<b>In foreign currency</b>			
in US \$	in Crore	<b>50.06</b>	58.83
in EURO	in Crore	<b>58.22</b>	56.24
in Libya Dinar ( LYD)	in Crore	<b>0.81</b>	0.81

	in Riyal Oman ( RO)	in Crore	<b>0.03</b>	0.03
	<b>In Indian currency</b>			
	in US \$	₹ Crore	<b>3301.90</b>	3431.02
	in EURO	₹ Crore	<b>4328.80</b>	3794.70
	in LYD	₹ Crore	<b>38.74</b>	36.72
	in RO	₹ Crore	<b>5.25</b>	4.96
	in Others	₹ Crore	<b>179.83</b>	49.93
	<b>b) Liabilities</b>			
	<b>In foreign currency</b>			
	in US \$	in Crore	<b>26.44</b>	31.40
	in EURO	in Crore	<b>18.22</b>	20.28
	in LYD	in Crore	<b>1.36</b>	1.38
	<b>In Indian currency</b>			
	in US \$	₹ Crore	<b>1757.45</b>	1978.08
	in EURO	₹ Crore	<b>1371.63</b>	1381.30
	in LYD	₹ Crore	<b>65.74</b>	69.92
	in Others	₹ Crore	<b>121.98</b>	72.17
12	a) Expenditure on departmental Repair & maintenance which are as under :			(₹ in Crore)
			<b>2015-16</b>	2014-15
	Plant & Machinery		<b>218.58</b>	234.03
	Buildings		<b>56.40</b>	55.29
	Others		<b>37.64</b>	43.45
	b) Agency Commission on exports included in expenses in connection with exports		<b>8.21</b>	18.53
	c) Expenditure on research & development		<b>270.63</b>	300.76
	d) Rent Residential		<b>54.79</b>	53.12
	e) Payment to Auditors (Net of Service Tax)			
	As Auditors		<b>0.73</b>	0.69
	includes paid abroad		<b>0.03</b>	0.07
	Reimbursement of expenses		<b>0.12</b>	0.14
	Taxation matters(including certification)		<b>0.16</b>	0.28
	includes paid abroad		<b>0.00</b>	0.11
	Other services		<b>0.37</b>	0.44
	f) Payment to Cost Auditors		<b>0.12</b>	0.05
	g) Expenditure on entertainment		<b>5.74</b>	6.07
	h) Expenditure on foreign travel			
	Expenditure in Rupees		<b>8.75</b>	11.79
	i) Expenditure on Publicity and Public relations			
	Salaries allowances & other benefits		<b>11.83</b>	10.76
	Other expenses		<b>9.67</b>	10.11
	j) Director's Fees		<b>0.17</b>	0.07

- 13 As required by AS-18 'Related Party Disclosures', other than JVs that have been consolidated in these accounts, are given below :

Related Parties: Key Management Personnel

S/Shri

CMD, Functional Directors & CS: Atul Sobti (w.e.f. 01.01.2016) , B. P. Rao (up to 31.12.2015) , P. K. Bajpai (up to 31.05.2015) , R. Krishnan (up to 31.07.2015) , W. V. K. Krishna Shankar (up to 31.08.2015), T. N. Veeraraghavan (up to 30.06.2015), D. Bandyopadhyay (w.e.f. 01.08.2015), Amitabh Mathur (w.e.f. 01.09.2015), S. Biswas (w.e.f. 24.09.2015), T. Chockalingam (w.e.f. 11.02.2016), IP Singh, Anand K Bansal ( up to 02.12.2015), Vinayak Tilak (w.e.f. 01.03.2016), S.Srinivasa Rao.

<b>Key Management Personnel (KMP)</b>		<b>2015-16</b>	<b>2014-15</b>
Payment of Salaries	₹ Crore	4.86	3.12
Sale of Fixed Assets	₹ Crore	0.01	0.00
<b>Relatives of KMP</b>			
Amounts due to BHEL at the end of the year	₹ Crore	0.01	0.01
Payment of Salaries	₹ Crore	0.20	0.26

#### 14 Lease

Details of assets taken on lease on or after 1st April 2001 are as under:

##### i) Finance Lease:

a.	Outstanding balance of Minimum Lease payments		<b>2015-16</b>	<b>2014-15</b>
	not later than one year	₹ Crore	<b>96.35</b>	69.01
	later than one year and not later than five years	₹ Crore	<b>164.96</b>	69.66
	later than five years	₹ Crore	<b>0.00</b>	0.12
	<b>Total minimum lease payments at the balance sheet date</b>	₹ Crore	<b>261.31</b>	138.79
b.	Present Value of (a) above			
	not later than one year	₹ Crore	<b>76.50</b>	57.05
	later than one year and not later than five years	₹ Crore	<b>126.73</b>	61.29
	later than five years	₹ Crore	<b>0.00</b>	0.11
	<b>Total of Present Value at the balance sheet date</b>	₹ Crore	<b>203.23</b>	118.45
c.1	Finance charges	₹ Crore	<b>58.08</b>	20.34
c.2	Present value of Residual value, if any	₹ Crore	<b>0.00</b>	0.01

- ii) The company is in the practice of taking houses for employees, office buildings and EDP equipment etc. on operating lease both as cancellable and non-cancellable..

##### iii) Operating Lease

Operating Lease		2015-16	2014-15
The future minimum lease payments under non-cancellable operating lease are as under			
not later than one year	₹ Crore	1.47	2.02
later than one year and not later than five years	₹ Crore	2.72	3.58
later than five years	₹ Crore	1.11	2.18

- iv) Details regarding rentals in respect of assets taken on lease prior to 1.4.2001 are as given below:

<b>Cost of Assets</b>			
Land & Buildings	₹ Crore	<b>0.01</b>	0.01
<b>Rentals payable over unexpired period of lease</b>			
Land & buildings	₹ Crore	<b>0.02</b>	0.02

## 15 Earnings per Share:

		2015-16	2014-15
Weighted average number of Equity Shares outstanding during the year (A)	Nos. in Crore	244.76	244.76
Nominal Value of Equity Share	(₹ )	2.00	2.00
Net Profit for the year after adjusting minority interest (B)	(₹ in Crore)	-895.93	1452.38
Basic and Diluted Earnings Per Share (B)/(A)	(₹ )	-3.66	5.93

## 16 The disclosure relating to Accounting Standard -29

(₹ in Crore)

a) Liquidated Damages	2015-16	2014-15
Opening	2225.03	1728.77
Additions	1025.14	734.68
Usage/ Write off/payment	-6.58	-31.24
Withdrawal/adjustments	-240.06	-207.18
Closing Balance	3003.53	2225.03
<b>Contractual Obligation</b>		
Opening	6119.20	5645.87
Additions	737.78	1043.86
Usage/ Write off/payment	-173.61	-239.28
Withdrawal/adjustments	-516.42	-331.25
Closing Balance	6166.95	6119.20

- b) Liquidated damages are provided in line with the Accounting Policy of the company and the same is dealt suitably in the accounts on settlement or otherwise. Contingent liability relating to liquidated damages is shown in item No. 7 of Note-31.
- c) The provision for contractual obligation is made at the rate of 2.5% of the contract revenue in line with significant Accounting Policy to meet the warranty obligations as per the terms and conditions of the contract. The same is retained till the completion of the warranty obligations of the contract. The actual expenses on warranty obligation may vary from contract to contract and on year to year depending upon the terms and conditions of the respective contract.

- 17 Item of expense and income less than ₹ one Lakh are not considered for booking under Prior Period Items.
- 18 For certain items, the Company and its Joint Ventures have followed different accounting policies as indicated in Significant Accounting policies. However, impact of the same is not material. The share of jointly controlled entities has been indicated in each Notes of annual account by way of a note.
- 19 RPCL, a JV of the company, proposes to Install a total of 2400 MW (3\*800 MW) 2 units of 800 MW at Yermarus and one 800 MW unit at Edlapur. MOEF clearance is awaited for Edlapur
- 20 There are net outstanding debts of ₹2139 crs (after adjustment of advances) pertaining to 31 projects on hold due to various reasons like environment clearance, fuel linkage, land acquisition, fund constraints, force majeure, hold imposed by BHEL due to strategic reasons etc. FG/ WIP of ₹967 crs is also lying in these projects. Provision of ₹1069 crs for outstanding debts and ₹120 crs for inventory has been made during the year for these projects in line with the guidelines formulated in this regard.
- 21 Corporate Social Responsibility Expenses (CSR)

During the year, expenditure of ₹ 110.50 crore has been incurred on CSR activities (including ₹ 0.40 crore share of JV) in accordance with Section 135 of the Companies Act, 2013.

W.r.t. Raichur Power Corporation Limited, as per the Letter of Ministry of Environment and Forests, GOI, an amount of ₹ 2500,00,000 is to be earmarked as one time capital cost of CSR Program. Subsequently recurring

expenditure of ₹ 500,00,000 is to be earmarked annually for CSR activities. During the year ₹ 35,00,000 CSR expenses are incurred.

- 22 Capital WIP includes pre operative expenses capitalised by RPCL, a JV of the company. Details are as follows :

Particulars	(₹ in Crore)	
	2015-16	2014-15
Opening Capital WIP	331.45	248.10
Add/Less: deductions due to change in share holding	53.51	-88.05
Opening Capital WIP (Revised) (A)	384.96	160.05
Cost of Material Consumed	8.94	-
Employee Benefit Expense	4.13	2.50
Financial Costs	234.22	164.02
Depreciation and amortization expense	0.62	0.65
Other Expenses	5.11	4.40
Other Incomes	-0.12	-0.17
Sub Total (B)	252.89	171.40
Closing WIP ( A+B)	637.85	331.45

## 23 Additional Information

(₹ in Crore)

Name of the entity	Net Assets i.e. Total Assets minus Total Liabilities		Share in Profit or Loss	
	As % of Consolidated Net Assets	Amount	As % of Consolidated Profit or Loss	Amount
1	2	3	4	5
BHEL	97.66 (98.44)	32553.02 (33674.76)	100.42 (97.72)	-899.69 (1419.29)
Subsidiaries-Indian				
1. BHEL Electrical Machines Ltd. ( BHEL EML)	0.00 (0.01)	0.80 (4.62)	0.17 (-0.28)	-1.52 (-4.03)
Minority Interests in BHEL EML	0.00 (-0.01)	0.77 (-2.23)	0.16 (0.13)	-1.46 (1.94)
( Investment as per the equity method)				
Joint Ventures- Indian				
( As per proportionate consolidation)				
1 NTPC-BHEL Power Projects Pvt. Ltd.	0.13 (0.19)	43.39 (66.32)	2.56 (0.06)	-22.93 (0.83)
2 2. BHEL-GE Gas Turbines Services Ltd.	0.36 (0.32)	120.30 (110.96)	-3.31 (2.37)	29.68 (34.35)
3 3. Dada Dhuniwale Khandwa Power Ltd.	0.07 (0.07)	22.88 (22.88)	0.00 (0.00)	0.00 (0.01)
4 4. Raichur Power Corporation Ltd.	1.78 (0.97)	589.32 (331.52)	-	-
<b>Total</b>	<b>100.00</b>	<b>33330.48 (34208.83)</b>	<b>100.00</b>	<b>-895.93 (1452.38)</b>

24. Previous year's figures have been regrouped /rearranged wherever considered necessary.



## 25. SEGMENT INFORMATION - CONSOLIDATED

(₹ in Crore)

			For the year ended 31.3.2016	For the year ended 31.3.2015				
A. PRIMARY SEGMENT - BUSINESS SEGMENTS								
			Power	Industry	Total	Power	Industry	Total
I.	SEGMENT REVENUE							
a.	Segment Revenue		21402.80	5911.20	27314.00	24574.17	6980.59	31554.76
b.	Operating Revenue-External (a) - (b)		21402.80	5911.20	27314.00	24574.17	6980.59	31554.76
II.	SEGMENT RESULTS							
a.	Segment Results		-5.22	-238.84	-244.06	3014.97	336.54	3351.50
b.	Unallocated expenses (Net of income)				1174.73			1071.78
c.	Profit before Finance cost & Income tax (a) - (b)				-1418.79			2279.72
d.	Finance cost				27.69			92.43
e.	Net Profit before Income Tax ( c) - (d)				-1446.48			2187.29
f.	Income Tax				-549.09			736.85
g.	Net Profit after Income Tax				-897.39			1450.44
III	ASSETS & LIABILITIES							
a.	Segment Assets		45496.90	9923.42	55420.32	46524.74	11010.68	57535.42
b.	Unallocated Assets				14223.73			13310.57
c.	Total Assets				69644.05			70845.99
d.	Segment Liabilities		29219.86	6101.69	35321.55	29424.27	6161.18	35585.45
e.	Unallocated Liabilities				1149.23			1051.71
f.	Total Liabilities				36470.78			36637.16
IV	OTHER INFORMATION							
a.	Cost incurred during the period to acquire fixed assets (Incl. CWIP)		796.72	108.96		928.02	124.54	
b.	Depreciation		698.91	182.29		800.68	213.20	
c.	Non Cash Expenses (other than depreciation)		1852.82	517.40		1262.13	398.62	
B. SECONDARY SEGMENT - GEOGRAPHICAL SEGMENTS								
			Within India	Outside India	Total	Within India	Outside India	Total
1	Net Sales / Income from Operations		26045.49	1268.51	27314.00	30256.44	1298.33	31554.76
2	Total Assets		68932.74	711.31	69644.05	70077.61	768.38	70845.99
3	Cost incurred during the period to acquire Fixed Assets		948.93	6.23	955.16	1134.60	0.35	1134.95

### Notes:

- The primary segments have been identified as 'Power and Industry' based on the orders booked by the respective business sector the order booked by International operation group is taken to Power or Industry as the case may be.
- BGGTS (JV) is in the business of sale of parts and components of gas turbines, Engineering services, repair services and uprate repairs and other joint ventures are in setting up power projects or under power business the same has been considered under 'Power Segment'.
- BHEL EML (Subsidiary Co.) manufacturing of rotating electrical machines, considered under 'Industry segment'.

## Breaking the barriers!



Setting an example with his indomitable will and rock like determination Mr. Ajay Kumar Kochiri, senior engineer, HPEP Hyderabad with hearing impairment (85% disability) effectively overcame all the hurdles of life and successfully won the “best employee of the year 2015” under the “National award for empowerment of persons with disabilities” program. Hon'ble Union Minister for Finance presented the prestigious award to Mr. Kochiri in presence of Hon'ble Union Minister for Social Justice and Empowerment.

Despite the disability, Ajay pursued B. Tech degree from JNTU Anantapur & completed his M. Tech in Computer Assisted Manufacturing from IIT Guwahati in 2009.

Giving hope to millions of disabled people across the world, his achievements are inspirational. He overcame the toughest obstacles and came out as a true champion. BHEL is proud of him!

238 [Ten Years Financials](#)

240 [Value Addition Statement](#)

241 [Performance Annual Plan](#)

241 [Contribution to Exchequer](#)

242 [BHEL in India](#)

243 [Product Profile](#)

252 [Glossary](#)

**Additional  
Information for  
Stakeholders**



## Ten Years Financials

(₹ in Crore)

	2015-16	2014-15	2013-14	2012-13	2011-12	2010-11	2009-10	2008-09	2007-08	2006-07
<b>I EARNINGS/OUTGOINGS</b>										
<b>Earnings</b>										
Turnover (Gross)	26587	30947	40338	50156	49510	43337	34154	28033	21401	18739
Revenue from Operations (Net)	25138	29542	38389	47618	47228	41566	32861	26212	19305	17237
Other Operational Income	492	700	720	807	751	680	493	514	422	379
Other Income	1450	1220	1616	1121	1266	1021	1155	983	1023	445
<b>Total Earnings</b>	<b>27080</b>	<b>31462</b>	<b>40725</b>	<b>49546</b>	<b>49245</b>	<b>43267</b>	<b>34509</b>	<b>27709</b>	<b>20750</b>	<b>18061</b>
<b>Outgoings</b>										
Cost of material consumption, Erection & Engineering Expenses	16398	17758	22103	27899	28908	23209	20672	17620	11821	10182
(Increase)/Decrease in work in progress & Finished Goods	210	(338)	1054	116	(823)	(127)	(787)	(1152)	(827)	(181)
Employee benefit expenses	5541	5450	5933	5753	5466	5397	6540	2984	2608	2369
Other expenses of manufacture, administration, selling and distribution (Incl. prior period items)	3036	3707	3315	3777	3242	2537	2057	1823	1644	1496
Provisions (Net)	2455	1604	2259	1566	1403	2715	-934	1281	778	172
Less : Cost of job done for internal use	47	28	68	76	104	69	121	61	38	28
<b>Outgoings before finance cost &amp; depreciation</b>	<b>27594</b>	<b>28153</b>	<b>34596</b>	<b>39035</b>	<b>38092</b>	<b>33662</b>	<b>27427</b>	<b>22495</b>	<b>15986</b>	<b>14009</b>
Profit before depreciation, finance cost & tax	-514	3309	6129	10511	11153	9605	7082	5214	4763	4052
Depreciation	936	1077	983	953	800	544	458	334	297	273
<b>Gross Profit</b>	<b>-1450</b>	<b>2232</b>	<b>5146</b>	<b>9558</b>	<b>10353</b>	<b>9061</b>	<b>6624</b>	<b>4880</b>	<b>4466</b>	<b>3779</b>
Finance Cost	27	92	133	125	51	55	33	31	36	43
<b>Profit before tax</b>	<b>-1477</b>	<b>2140</b>	<b>5013</b>	<b>9432</b>	<b>10302</b>	<b>9006</b>	<b>6591</b>	<b>4849</b>	<b>4430</b>	<b>3736</b>
Tax Expense (Net)	-564	721	1553	2817	3262	2995	2280	1711	1571	1321
<b>Profit after tax</b>	<b>-913</b>	<b>1419</b>	<b>3460</b>	<b>6615</b>	<b>7040</b>	<b>6011</b>	<b>4311</b>	<b>3138</b>	<b>2859</b>	<b>2415</b>
Dividend	98	284	693	1323	1567	1525	1141	832	746	600
Corporate Dividend Tax	20	57	118	221	254	249	191	141	127	93
<b>II WHAT THE COMPANY OWNED</b>										
<b>Fixed Assets</b>										
Gross Block	13298	12588	12050	10783	9707	8050	6580	5225	4443	4135
Less: Accumulated Depreciation & Lease Adj.	9335	8448	7357	6325	5410	4649	4165	3754	3462	3146
<b>Net Block</b>	<b>3963</b>	<b>4140</b>	<b>4693</b>	<b>4458</b>	<b>4297</b>	<b>3401</b>	<b>2415</b>	<b>1471</b>	<b>981</b>	<b>989</b>
Capital WIP incl. Intangible Assets under development	315	518	642	1172	1348	1733	1530	1157	658	302
Non-Current Investments	663	418	420	429	462	439	80	52	8	8
Deferred Tax Assets(Net)	3135	2221	1969	1551	1546	2164	1527	1840	1338	935
Current Assets, Loans & Advances and other non current assets	58614	61170	65067	62518	59123	51523	42915	36901	27906	20980
<b>Total assets</b>	<b>66690</b>	<b>68467</b>	<b>72791</b>	<b>70128</b>	<b>66776</b>	<b>59260</b>	<b>48467</b>	<b>41421</b>	<b>30892</b>	<b>23214</b>

## Ten Years Financials (Contd.)

(₹ in Crore)

	2015-16	2014-15	2013-14	2012-13	2011-12	2010-11	2009-10	2008-09	2007-08	2006-07
<b>III WHAT THE COMPANY OWED</b>										
Long Term Borrowings	126	61	105	129	123	102	81	105	61	58
Liabilities & Provisions	33510	34321	39639	39555	41280	39004	32489	28377	20056	14368
Total liabilities	33636	34382	39744	39684	41403	39106	32570	28482	20117	14426
<b>IV NET WORTH OF THE COMPANY</b>										
Share Capital	490	490	490	490	490	490	490	490	490	245
Reserves & Surplus	32564	33595	32557	29954	24883	19664	15427	12449	10285	8544
Net Worth	33054	34085	33047	30444	25373	20154	15917	12939	10775	8788
<b>V NET WORKING CAPITAL</b>	25152	26877	28026	24273	17892	12551	10426	8524	7850	6612
<b>VI CAPITAL EMPLOYED</b>	29778	31435	33139	29161	22651	16391	12968	10091	8873	7640
<b>VII VALUE ADDED</b>	8382	11983	15046	19460	19098	18476	13171	9894	8323	7182
<b>VIII RATIOS</b>										
PBDIT to total assets (%) #	-0.8%	4.7%	8.6%	15.4%	17.7%	17.8%	15.8%	14.4%	17.6%	19.6%
Gross profit to capital employed (%) #	-4.7%	6.9%	16.5%	36.9%	53.0%	61.7%	57.5%	51.5%	54.1%	51.6%
Turnover/ gross block	2.0	2.5	3.3	4.7	5.1	5.4	5.2	5.4	4.8	4.5
Earnings per share (₹) †	-3.73	5.80	14.14	27.03	28.76	24.56	17.61	12.82	11.68	9.86
Net worth per share (₹) †	135.04	139.26	135.02	124.38	103.67	82.34	65.03	52.86	44.02	35.90
Current Ratio	1.75	1.78	1.76	1.64	1.43	1.32	1.32	1.30	1.40	1.50
Total Debt / Equity	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Return on Net Worth	-2.8%	4.2%	10.5%	21.7%	27.7%	29.8%	27.1%	24.3%	26.5%	27.5%
Gross profit margin	-5.5%	7.2%	12.8%	19.1%	20.9%	20.9%	19.4%	17.4%	20.9%	20.2%
Net profit margin	-3.4%	4.6%	8.6%	13.2%	14.2%	13.9%	12.6%	11.2%	13.4%	12.9%

# On the basis of average assets and capital employed

† Figures are restated on post-split made in 2011-12 and bonus issue of 1:1 in 2007-08

## Value Addition Statement

(₹ in Crore)

Description	2015-16	2014-15	2013-14	2012-13	2011-12
<b>A. Generation of Value Addition</b>					
Value of Production (less excise duty)	24765	29755	37077	47219	47815
Less - Direct Material, Power & Fuel and Payments to Contractors	16383	17772	22031	27759	28717
Value Added	8382	11983	15046	19460	19098
Less - Other Operating Exp (Net of income)	3355	3224	2982	3196	2479
Net Value Addition	5027	8759	12064	16264	16619
% to value of production	20.30%	29.44%	32.54%	34.44%	34.76%
<b>B. Application of Value Addition</b>					
Employees payments	5541	5450	5934	5753	5466
% to net value addition	110.23%	62.22%	49.19%	35.37%	32.89%
Depreciation	936	1077	983	953	800
% to net value addition	18.61%	12.30%	8.15%	5.86%	4.81%
Financing charges :					
- Interest on borrowings	27	92	133	125	51
% to net value addition	0.53%	1.05%	1.10%	0.77%	0.31%
Tax Provision (Income Tax, Def. Tax & Prior Period)	-563	721	1554	2818	3262
% to net value addition	-11.21%	8.23%	12.88%	17.32%	19.63%
Dividend (incl. dividend tax)	118	341	810	1544	1821
% to net value addition	2.34%	3.90%	6.71%	9.49%	10.95%
Retained Profit	-1031	1078	2651	5071	5219
% to net value addition	-20.51%	12.31%	21.97%	31.18%	31.41%



## Performance Annual Plan

(₹ in Crore)

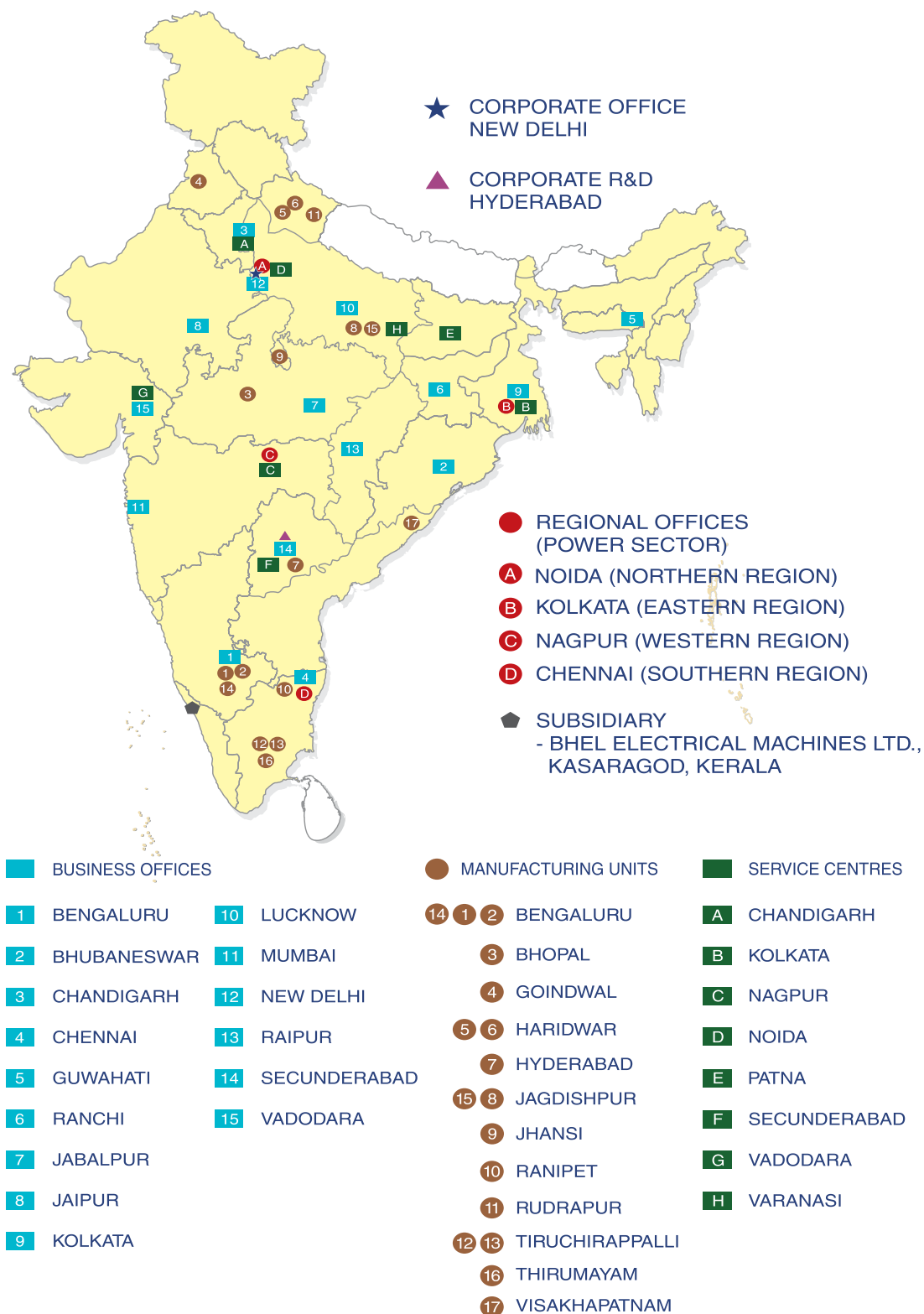
Category of Investment	2015-16	2014-15
Schemes	80	217
Modernisation and Rationalisation, others	141	119
Customer Project Related Capital Investment	90	59
<b>Total</b>	<b>311</b>	<b>395</b>

## Contribution to Exchequer

(₹ in Crore)

2015-16	2014-15	2013-14	2012-13	2011-12
1857	2449	4729	6561	6448

# BHEL in India



This graphical representation does not purport to be the political map of India

# Product Profile

## THERMAL POWER PLANTS

- Steam Generators, Steam Turbines, Turbo Generators along with regenerative feed cycle up to 1000 MW capacities for fossil-fuel and combined-cycle applications. Capability to design and manufacture Steam Generators, Steam Turbines with supercritical steam cycle parameters and matching Turbo Generators of up to 1000 MW unit size.
- Condensers, Condensate Extraction Pumps, Boiler Feed Pumps, Valves and Heat Exchangers meeting above requirement of TG Sets up to 1000 MW.

## NUCLEAR POWER PLANTS

- BHEL can engineer, manufacture and supply Reactor side Components like Steam generator, Reactor header, End Shield, special purpose Heat Exchangers, Pressure Vessels, Motors etc. for PHWR based Nuclear Power plants upto 700 MWe capacity. BHEL also provides complete solution to Secondary Side of Nuclear Power Projects and has capability to supply Turbines, Turbo Generators and Condensers etc. for Nuclear Power plants upto 700 MWe capacity.
- BHEL has the capability to design, manufacture and supply various components of both Reactor side and Secondary side for Nuclear Power Plant Projects upto 500 MWe rating based Fast Breeder Reactors (FBR)

## GAS-BASED POWER PLANTS

- Gas turbines and matching generators ranging upto 299 MW (ISO) rating tailored to meet specific needs with regard to plant layout, type of fuels, emission and noise requirements. The features of these machines include :
  - o Capability to burn a variety of fuels, both gaseous and liquids.
  - o Mixed firing of many of these combinations of gases and liquids.
  - o Low exhaust emission levels upto 15ppm of NOx with DLN combustors.

- Gas turbine-based co-generation and combined-cycle systems for industry and utility applications.

## HYDRO POWER PLANTS

- Custom-built conventional hydro turbines of Kaplan, Francis and Pelton types with matching generators, pump turbines with matching motor-generators upto 300 MW, Bulb turbine with matching generators up to 10 MW
- High capacity pumps along with matching motors for Lift Irrigation Schemes (up to 150 MW)
- Small hydro power plants 10- 25 MW unit rating capacity
- Electro Hydraulic Microprocessor based Digital Governor for conventional turbines
- Microprocessor based Digital Controller for lift irrigation schemes
- Static excitation systems for Hydro generators & motors
- Brushless exciter for Hydro generators & motors
- Special purpose Motor Generator sets
- Spherical (rotary) valves, butterfly valves and auxiliaries for hydro stations

## SOLAR POWER PLANTS

- EPC solutions from Concept to Commissioning of Solar PV Power plants:
  - o Grid interactive Systems
  - o Standalone Systems
  - o Roof Top Systems
  - o Hybrid Systems

## DG POWER PLANTS

- HSD, LDO, FO, LSHS, natural gas based diesel generator power plants, unit rating of up to 20 MW and voltage up to 11 kV, for emergency, peaking as well as base load operations on turnkey basis

## WATER MANAGEMENT

Complete Water Treatment Solutions for Power Plants, Industrial applications and other utilities with different treatment technologies which include:-

- Pre Treatment plants (PT)
- Sea Water Reverse Osmosis (SWRO) plants
- Demineralization (DM) Plants
- Membrane based treatment for industrial applications
- Effluent Treatment Plants (ETP)
- Sewage Treatment plants (STP)
- Zero Liquid Discharge (ZLD) System

## DEFENCE

- Super Rapid Gun Mount (SRGM) 76/62 gun for naval ships
- Integrated Platform Management system (IPMS) for naval ships
- Integrated Bridge System (IBS)
- Training Simulator for Vehicles, platforms, radars, weapons, missiles and CBT for all defence and para-military forces
- Turret Casting for T72 Tanks
- Casting for ships
- Castings and Forgings for Defence application
- Strategic equipment, etc.

## SYSTEMS AND SERVICES

### Power Generation Systems

- Turnkey power stations/ EPC contracts.
- Combined-cycle power plants.
- Cogeneration systems.
- Captive power plants.
- Concept to Commissioning solutions for Solar Photovoltaic systems
- Modernization and renovation of power stations and RLA studies.
- Software packages including simulators for utilities.
- Erection, commissioning, support services, spares management and consultancy services for all the above systems.

### Transmission Systems

- EHV & UHV Sub-stations/switchyards both AIS & GIS type ranging from 33 kV to 765 kV.
- HVDC transmission systems.
- Flexible AC Transmission system (FACTS) solutions
  - o Fixed Series Compensation (FSC)

- o Static VAR Compensation (SVC)
- o STATCOM
- o Controlled Shunt Reactor (CSR)
- o Phase Shifting Transformer (PST)
- Power system studies, Feasibility studies & Insulation Coordination

## BOILERS

- Steam generators for utilities, ranging from 30 to 800 MW capacity, using coal, lignite, oil, natural gas or a combination of these fuels; capability to manufacture boilers with supercritical parameters up to 1000 MW unit size.
- Fuel Flexible boilers capable of all combination of blending / co-firing diverse qualities of imported/ indigenised coals, blending of lignite, petcoke, etc.
- Steam generators for industrial applications of the following types ranging from 40 to 450 T/Hour capacity, using coal, natural gas, industrial gases, biomass, lignite, oil, Bagasse or a combination thereof.
  - o Pulverized coal / lignite fired boilers
  - o Stoker fired boilers
  - o Bubbling fluidized bed combustion (BFBC) boilers.
  - o Circulating fluidized bed combustion (CFBC) boilers up to 250 MW.
  - o Heat-recovery steam generators (HRSG).
  - o Chemical recovery boilers for paper industry, ranging from capacity of 100 to 1000 T/Day of dry solids.

## BOILER AUXILIARIES

### Fans

- Axial reaction fans of single stage and double stage for clean air application and dust laden hot gases applications up to 200°C, with capacity ranging from 40 to 1300m<sup>3</sup>/s and pressure ranging from 400 to 1,500 mmwc.
- Axial impulse fans for both clean air and flue gas applications up to 200°C, with capacity ranging from 25 to 600m<sup>3</sup>/s and pressure up to 300 to 700 mmwc
- Single and double-suction radial fans (plate aerofoil bladed) for clean air and dust-laden hot gases applications up to 400°C, with capacity ranging from 4 to 660m<sup>3</sup>/s and pressure ranging from 200 to 3000 mmwc

## Air-Preheaters

- Tubular Air Preheaters for industrial and utility boilers
- Rotary regenerative Air-Preheaters for boilers and process furnaces.
- Large rotary regenerative Air-Preheaters for utilities of capacity up to 800 MW.

## Pulverizers

- Bowl mills of slow and medium speed for coal fired thermal stations with capacity from 10 T/Hour to 120 T/Hour catering to 60 MW to 1000 MW thermal power stations
- Ball Tube mills for pulverizing low-grade coal with high ash content from 30 T/ Hour to 110 T/ Hour catering to 110 MW to 500 MW thermal power stations
- Apart from strong presence in the Indian market for utility thermal power stations, BHEL also caters to the requirement of:
  - o Steel Plants for Pulverised Coal Injection to Blast furnace
  - o Cement Plants for coal pulverising
  - o Fertilizers Plants for their captive power generation

## Electrostatic Precipitators (ESP)

- Electrostatic precipitators of any capacity with outlet emission as low as 17 mg/Nm<sup>3</sup> (efficiency up to 99.97%) for coal fired utility and industrial applications including Bio mass fired boilers, cement plants, steel plants, soda recovery boilers etc.
- Bag Filters for Utility and Industrial applications.

## Other systems

- Guillotine gates with electric / pneumatic actuator. Sizes up to 6m height & 7m width (with split) 100% leak proof with seal air.
  - o Bi-plane dampers with electric actuator. Sizes up to 7m height & 5m width. 100% leak proof with seal air.
  - o Louver dampers (Open close / Regulating) with electric / pneumatic actuator. Sizes up to 7m height & 5m width.
  - o Control dampers (Regulating) with pneumatic actuator. Sizes up to 11m height (split construction) & 4.5m width.
- Flue gas desulphurization (FGD) systems with sea water/ limestone slurry scrubber.

- Steel Chimneys for Heat Recovery Steam Generators (HRSG), Industrial Boilers, auxiliary boilers and other flue gas exhaust applications.

## SOOT BLOWERS

- Long retractable soot blowers (LRSB) for travel up to 12.2m
- Furnace temperature probe (FTP) for travel length 6.9m and 8.3m
- Long Retractable Non-rotating (LRNR) soot blowers with forward blowing for Air heaters
- Ash discharge valve for CFBC boiler application
- Soot blowers with integral starters
- Soot blower Sequential PLC control panel
- Rack type Long Retractable Soot blowers
- Wall blowers
- Rotary Soot blowers

## VALVES

- High and Low-pressure Turbines Bypass Valves & hydraulic system for utilities and industrial application
- High and medium-pressure Valves, Cast and Forged Steel Valves of Gate, Globe, Non-Return (Swing-Check and Piston Lift-Check) types for steam, oil and gas duties up to 950 mm diameter, maximum pressure class 4500 (791 kg/cm<sup>2</sup>) and 650°C temperature.
- Hot reheat and cold reheat Isolating Devices up to 900 mm pipe size class 1500 and steam of 650°C temperature.
- High capacity Spring Loaded Safety Valves for set pressure up to 372 kg/cm<sup>2</sup> and temperature up to 630°C, and automatic electrically operated pressure relief valves for set pressure up to 210 kg/cm<sup>2</sup> and temperature up to 593° C
- Safety relief valves for applications in power, process and other industries for set pressure up to 421 kg/cm<sup>2</sup> and temperature up to 537° C.
- Reactive cum absorptive type vent Silencers maximum diameter of 2700 mm.
- Direct Water Level Gauges
- Angle Drain Valves - Single & Multi Stage for Turbine Drain Application
- Severe Service Control Valves for RH & SH Spray Lines
- Quick Closing Non return Valves for Extraction



lines and Cold Reheat Non Return valves, up to 800mm diameter, 158 kg/cm<sup>2</sup> pressure and 540°C temperature.

- Butterfly Valves( Fabricated/ cast body & door)

## PIPING SYSTEMS

- Power cycle piping, Constant load Hangers, Variable spring Hangers, Hanger components, Low Pressure piping including Circulating Water Piping for power stations up to 1000 MW capacity including Super Critical sets
- Piping systems for Nuclear Power Stations, Combined Cycle Power Plants & Industrial boilers and for power plants in Process Industries

## SEAMLESS STEEL TUBES

- Hot-finished and cold-drawn seamless steel tubes with a range varying from outer diameter of 19 to 133 mm and wall thickness of 2 to 14 mm, in carbon steel and low-alloy steels to suit ASTM/API and other international specifications including Rifled tubes and Spiral finned tubes.

## STEAM TURBINES

- Steam Turbines of higher ratings upto 1000 MW for thermal Sets conforming to international Specifications.
- Steam turbines for 500 MW Nuclear Power Plants.

## TURBOGENERATORS

- Turbogenerators of higher rating upto 1000 MW supercritical parameters.
- Turbogenerators for 270MW, 540 MW and 700 MW Nuclear Power Plants.

## INDUSTRIAL SETS

- Industrial turbo-sets of rating from 1 to 200 MW.
- Industrial steam turbines and gas turbines for drive applications and co-generation applications.
- Reheat steam turbines and matching generators ranging from 120 to 200 MW captive, utility and combined cycle power plants.

## CASTINGS AND FORGINGS

- Sophisticated heavy castings and forgings of creep resistant alloy steels, stainless steel and other grades of alloy steels meeting stringent international specifications for components of sub critical, supercritical and ultra super critical technology.

## CONDENSER AND HEAT EXCHANGERS

- **Surface Condenser:**
  - 236 MW, 500 MW & 700 MW for Nuclear power plants
  - 12.5 MW Marine applications
  - Industrial Condensers
- **Feed Water Heaters (HP Heaters, LP Heaters, Drain Coolers, Duplex Heater, etc.)**
  - Thermal : 7 to 500 MW (sub-critical) & 300-800 MW (super critical with single stream)
  - Nuclear 236 MW, 500 MW and 700 MW rating
- **Moisture Separator & Reheater(MSR):**
  - 236 MW, 500 MW & 700 MW Nuclear sets
- **Live Steam Reheater (LSR):**
  - 500 MW FBR Nuclear sets
- **Auxiliary Heat Exchangers for Turbo and Hydro Generators :**
  - Air Coolers (Frame & Tube Type)
  - Oil Coolers (Shell & Tube Type and Plug In Type)
  - Hydrogen Coolers (Frame & Tube Type)
- **Auxiliary Heat Exchangers for Transformers :**
  - Oil Coolers (Shell & Tube Type Single Tube or Concentric Double Tube Type) (Frame & Tube Type)
- **Auxiliary Heat Exchangers for General Application**
  - Water - Water Coolers (Shell & Tube Type)
- Industrial Heat Exchangers for Refineries, Petro-Chemicals & Fertilizers industries.
- Flash Tanks for thermal & nuclear sets
- Service Tanks, Storage Tanks & Pressure vessels for Thermal, Nuclear sets of all ratings & industrial applications
- CS/SS/Non-ferrous shell and tube heat exchangers and pressure vessels  
(For all applications irrespective of rating)
- Air-cooled heat exchangers for GTG up to Fr-9E, and Compressor applications
- Steam jet air ejectors for all condensers upto 150 MW
- Deaerators from 7 MW to 800 MW
- Gland steam condensers 7 MW to 150 MW
- Gas coolers for compressor applications
- Oil coolers- STG upto 150 MW, GTG up to Fr-9E,

- Generator Air coolers upto 150 MW STG and GTG up to 9 FA

## PUMPS

- Pumps for various utility power plant applications up to a capacity of 1000 MW:
  - o Boiler feed pumps (motor or steam turbine driven) and Boiler feed booster pumps.
  - o Condensate extraction pumps.
  - o Circulating water pumps (also known as Cooling water Pumps)

## COMPRESSORS

- Multi stage Centrifugal compressors along with auxiliary system for various applications are manufactured and supplied with following configuration & parameters
  - o Model –
    - o Horizontally split type up to 40 bar design pressure
    - o Vertically split type up to 350 bar design pressure
  - o Capacity – upto 300000 m<sup>3</sup>/hr
  - o Gas – Air, CO<sub>2</sub>, N<sub>2</sub>, H<sub>2</sub>, NH<sub>3</sub>, Natural Gas, Wet Gas, Propylene etc.,
  - o Sealing system – Dry Gas Seal
  - o Industry–Refineries, Fertilizers, Oil & Gas, Steel, Power and Natural Gas Transportation.
  - o International standard – API 617
  - o Testing capability – MRT, Performance test, Full load, full pressure full speed test, Complete Unit Test
  - o Driver – Steam Turbine, Gas Turbine, Motor

## SOLAR PHOTOVOLTAICS

- Mono/ Multi Crystalline Solar Cells (156 mm)
- Mono/Multi Crystalline PV Modules (80 to 320 Wp)
- Power Conditioning Unit (500/630 kVA)
- SCADA System
- HT switchgear
- Space grade Solar Panels
- Space grade Batteries

## AUTOMATION AND CONTROL SYSTEMS

- Steam Generator/ Boiler Controls including Boiler Protection

- Steam Turbine Controls
- Boiler Feed Pump (BFP) Drive Turbine Control
- Station Control and Instrumentation/ DCS
- Offsite/Off base controls/ Balance of Plant Controls
  - o Ash Handling Plant (AHP)
  - o Coal Handling Plant (CHP)
  - o Water System for power plant
  - o Mill Reject System (MRS)
  - o Condensate On-Load Tube Cleaning system (COLTCS)
  - o Gas Booster Compressor (GBC)
  - o Condensate Polishing Unit (CPU)
  - o Heating, Ventilation & Air conditioning (HVAC)
  - o Fuel Oil Unloading System (FOUS)
- Hydro Power Plant Control System
- Gas Turbine Control System
- Nuclear Power Plant Turbine & Secondary Cycle control system
- Nuclear Power Plant Primary Cycle Control Centre Instrumentation Package (CCIP)
- Power block of solar thermal power plant
- Industrial Automation
- Sub-Station Automation (SAS) and Supervisory Control & data Acquisition System (SCADA) for Substation & Solar PV Plants
- Non-FST HVDC control panels
- Electrical Control System (ECS) for Refineries
- Energy Management System (EMS) for Power Plant
- Electrical Interface System for MV/LV Switchgear

## POWER ELECTRONICS

- Excitation system
- AC Drive System
- Static Starters
- Induction Heating Equipment

## TRANSMISSION SYSTEM CONTROL

Converter Valves and controls for HVDC & FACTS

## POWER SEMICONDUCTOR DEVICES

- Diodes- Ranging from 1400-4400V/250-2000A
- Thyristors- Ranging from 1400-7000V/150-4950A
- Rotating Diodes for Turbo generators.

## SOFTWARE SYSTEM SOLUTION

- Merit Order rating
- Performance Analysis, Diagnostics & Optimization (PADO) for Thermal Utilities
- Performance Calculation & Optimization system
- OPC connectivity from DCS to third party systems
- Enterprise Asset Management System (EAMS)
- Enterprise Resource Planning (ERP)
- Operator Training Simulator
- Power House intranet software
- Alarm Analysis system
- Real Time Performance Data Monitoring system
- Historical Replay System

## SWITCHGEAR

Medium Voltage Vacuum Switchgear of various types for indoor and outdoor applications for voltage ratings up to 36 kV and Gas insulated switchgears (36 kV, 145 kV, 420kV)

- Indoor switchgears up to 12 kV, 50 kA, 4000 Amp for thermal, nuclear, hydro and combined cycle Power Plant Projects
- Indoor switchgears up to 36 kV, 40 kA, 2500 Amp for Industries and refineries
- Indoor Compact switchgear 12 kV, 25 kA, 1250 Amp for distribution system
- Outdoor Vacuum circuit breakers (12 kV, 25 kA, 1250 Amp / 36 kV, 25 kA, 2000 Amp / 25 kV, 25 kA, 1600 Amp) for distribution network/ track side railway application
- Outdoor pole mounted 12 kV Autorecloser / sectionaliser / capacitor switch for rural segment
- Gas insulated switchgears (36 kV, 40 kA, 2500 Amp/ 145 kV, 40 kA, 2500 Amp/ 420 kV, 40 kA, 3150 Amp) For transmission & distribution network, Refineries / hydro station / metro.
- SF6 circuit breakers ((145 kV, 40 KA, 3150 A), (420 kV, 50 kA, 4000 A))

## BUS DUCTS

- Bus-ducts with associated equipment to suit generator power output of utilities of up to 800 MW capacity.

## TRANSFORMERS & REACTORS

- Power transformers for voltage upto 1200 kV
  - o Generator transformers (up to 500 MVA, 400 kV, 3 Ph / 400 MVA, 765 kV, 1 Ph/400

MVA, 400 kV, 1 Ph)

- o Auto transformers (up to 1000 MVA, 400 kV, 3 Ph / 600 MVA, 400 kV, 1 Ph / 1000 MVA, 765 kV, 1 Ph / 1000 MVA, 1200 kV, 1 Ph)
- Converter Transformers / Smoothing Reactors (up to 600 MVA,  $\pm 500$  kV)/ (upto 254 MVar,  $\pm 500$  kV) for power stations.
- Shunt Reactors (up to 150 MVar, 420 kV, 3 Ph / 110 MVar, 765 kV, 1 Ph)
- Controlled Shunt Reactors (up to 200 MVA, 420 kV, 3 Ph / 150 MVar, 420 kV, 1 Ph / 110 MVar, 765 kV, 1 Ph)
- Phase Shifting Transformers (up to 315 MVA, 400 kV, 3 Ph, up to 333 MVA 420 kV, 1 Ph, PST ( 1000 MVA bank in 3 Phase) for transmission lines
- Instrument transformers
  - o Current transformers up to 400 kV
  - o Electro-magnetic voltage transformers up to 220 kV
  - o Capacitor voltage transformers (33KV to 1200 kV)
- Special Transformers
  - o Rectifier transformer (Up to 120 kA, 132 kV)
  - o Furnace transformer (Upto 33 kV, 60 MVA)
- ESP transformers up to 95 kvp, 1600 mA
- Smoothing reactors upto 3.3 mH , 2700 Amp.
- Dry Type reactor upto 300 mH , 120 Amp.
- DC Choke upto 0.5 mH , 4600 Amp.
- Dry type transformers up to 15 MVA 33 kV.

## CAPACITORS

- H.T. Capacitors for Power factor correction (Motor Capacitors) 3.3 to 11 kV delta connected Capacitor banks
- H.T. Capacitors for Shunt, Series & SVC (Static VAR compensation), Harmonic filter & HVDC applications (3.3 kV to 500 kV, 1 Ph/ 3 Ph capacitor banks of rating 0.5 MVar to 250 MVar)
- Capacitor Divider for CVT
- Coupling Capacitor for PLCC
- Surge Capacitor for protection of Generators & Transformers (11 kV to 40 kV)
- Roof Capacitor for traction locomotive
  - o Capacitor Divider for CVT up to 1200 kV
  - o Coupling Capacitor for PLCC upto 400 kV

## BUSHINGS

- 52 to 400 kV OIP condenser bushings for transformer applications
- 25 kV Locomotive bushings
- Special application bushings like Oil cable box, wall bushing, higher creepage, high cantilever load, High altitude bushing

## ON LOAD TAP CHANGERS (OLTC)

On Load Tap Changer for various application like Power Transformer, Furnace Transformer, Station Transformer, Rectifier Transformer etc.

- On Load Tap Changer up to 765 kV class Transformer
- Off Circuit Tap Switch up to 400 kV class Transformer

## CONTROL GEAR

### Industrial Control Gear

- Electronic controllers for industries/ power plants
- Digital Excitation control system (1000 A , 400 V DC/, 400 V DC with redundant thyristor stacks & DC field breaker)
- Large current rectifiers with PLC Based digital controls
- Digital Hydraulic/ compact Governors
- Digital AVR ( 1 Ph, 300 V DC/ 3 Ph, 400 V DC)
- Control panels and cubicles for applications in steel, aluminium, cement, paper, rubber, mining, sugar and petrochemical industries

### Contactors

- LT air break type AC for voltages up to 660 V
- LT air break type DC contactors for voltages up to 600 V
- HT vacuum type AC for voltages up to 11kV

### Control and Relay Panels

- Control & Protection Panels (up to 400 kV ) For EHV Transmission projects
- Synchronizing Trolley / Swing Panels
- Protection panels for large Generators up to 800 MW for thermal, nuclear, hydro and combined cycle Power Plant Projects
- Remote Control and relay panels for MV Switchgear
- Turbine gauge panels for hydro sets

- Outdoor type control panels and marshalling kiosks
- Remote Transformer Tap-Changer Control panels
- LT Switchgear, SCAP, Thyristor, RAPCON and STATCON Panels.

## INSULATORS

### PORCELAIN INSULATORS

- High-tension Porcelain Disc insulators for AC/ DC applications, ranging from 70kN to 420 kN electro-mechanical strength, for clean and polluted atmospheres, Suitable for application upto 1200kV AC &  $\pm 800$ kV HVDC transmission line & Sub-stations.
- Hollow porcelains up to 765 kV for Transformers & SF6 circuit breakers.
- Solid core insulators up to 400 kV for Bus Post & Isolators for substation applications.

### COMPOSITE INSULATORS

- For 25 kV Railway Traction.
- Long Rod insulator up to 765 kV for transmission lines.
- Hollow Insulators upto 765 kV for Instrument Transformers.

### WEAR RESISTANT MATERIAL (CERALIN)

- Ceramic Liners for Wear Resistant Application in Thermal Power Station and other various applications.
- Ceramic Liners for Ash Slurry Application.

## INDUSTRIAL AND SPECIAL CERAMICS

- EWLI – Electronic Water Level Indicators used in Boiler Drum Water Level Monitoring (BHELVISION system)
- Ceramic and Tungsten Carbide Flow Beans for Christmas tree valves.
- Grinding Media for Pulverizing in Thermal Power Plant.

## ELECTRICAL MACHINES

AC Squirrel cage, Slip ring, Synchronous, Variable speed motors; Industrial Alternators and Motors for Hazardous areas are manufactured as per range summarized below. Special-purpose machines are manufactured on request.

- o Voltage - AC - 415 V to 13800 V

- o Frequency - 50 Hz & 60 Hz
- o Enclosure - TETV, TEFC, CACW, CACA & SPDP
- AC Machines for Safe Area Application
  - o Induction Motors
  - o Squirrel cage motors -150 kW to 21000 kW
  - o Slip ring motors - 150 kW to 10000 kW
  - o Synchronous motors- 1000 kW to 20000 kW
  - o Variable speed Motors
    - 150 kW to 21000 kW (Squirrel cage motors)
    - 1000 kW to 20000 kW (Synchronous motors)
- AC Machines for Hazardous Area Application (Fixed speed or with VFD)
  - o Flame-proof squirrel cage Induction motors (Ex 'd') (150 kW to 1500 kW)
  - o Non-sparking squirrel cage Induction motors (Ex 'n') (150 kW to 4000 kW (higher ratings on request))
  - o Increased safety squirrel cage Induction motors (Ex 'e') (150 kW to 4000 kW (higher ratings on request))
  - o Pressurized motors (Ex 'p')
    - 150 kW to 21000 kW (Squirrel cage motors)
    - 1000 kW to 20000 kW (Synchronous motors)
- Mill Duty Motors (150 kW to 5000 kW with speed base speed > 150 rpm) for steel mills.
- Industrial Alternators (Steam turbine, Gas turbine and Diesel engine driven) (1500 kVA to 25000 kVA)
- Induction Generators (300 kVA to 6000 kVA) for mini/ micro HEP.
- 2 Pole Gas Turbine driven Generators up to 330 MW and matching Exciters.
- 4 Pole Gas Turbine driven Generators up to 60 MW and matching Exciters.
- 2 Pole Steam Turbine driven Generators up to 330 MW and matching Exciters.
- 4 Pole Steam Turbine driven Generators up to 60 MW and matching Exciters.
- Permanent Magnet Based Generators up to 5 MW.
- Gas Turbine generators up to 270MW.

## RAIL TRANSPORTATION

### Transportation Systems

- Electric Locomotives (upto 5000 HP, 25 kV AC)
- AC-DC Dual Voltage Electric Locomotives
- ACEMU Rakes
- Urban Transportation Systems
- Traction Propulsion Systems for:
  - o 6000 HP IGBT based AC Locomotives
  - o 1600 HP AC Electrical Multiple Unit (EMUs)
- Diesel-Electric Shunting Locomotives (Upto 1400 HP)
- Battery Powered Locomotive
- OHE recording-cum-test car
- Battery Powered Road Vehicles
- Dynamic Track Stabilizers
- Rail cum Road vehicle
- Diesel Electric Tower Car
- Utility Vehicle

### Traction Equipment

- Traction Converter
- Auxiliary Converter
- Vehicle Control Electronics
- Hotel Load Converter
- Traction Transformer (upto 5400 kVA) for conventional Electric Locomotives & (upto 7775 kVA) for 3 phase drive Electric Locomotives.
- Traction Transformers (upto 1050 kVA) for conventional AC EMU/ MEMUs & (upto 1578 kVA) for 3 phase EMU
- AC Traction Motors (upto 1150 kW) for Locomotives & EMUs
- DC Traction Motors (upto 630 kW) for Locomotives & EMUs
- AC Traction Alternators (upto 3860 kW) for DE Locomotives & EMUs
- Traction Generators (up to 2000 kW)
- Motor Generator sets (upto 25 kW) for auxiliary requirements
- Auxiliary generators and Exciters (upto 50kW)
- Eddy Current Clutch
- DC Blower Motors ( upto 50kW) for dynamic braking system



- Traction Gears and Pinions
- Wagon (Up to 28 Axle, 296 Tonne)
- Control Gear equipment for conventional Rolling Stock.
- Control Cubicles
- Traction Rectifiers
- Bogie Frame
- Wheel & Axle Assembly

## OIL FIELD EQUIPMENT

- Oil Rigs – A variety of on-shore drilling rigs with AC-SCR and AC – VFD technology, work-over rigs, mobile rigs, for drilling up to depths of 9,000 metres, complete with matching draw-works and hoisting equipment including:
  - Mast and substructure
  - Rotating equipment : Draw works ; Rotary ; Swivels; Travelling Blocks
  - Independent Rotary drive unit
  - Mud System including pumps
  - Power packs and rig electrics
  - Rig instrumentation
  - Rig utilities and accessories
  - Refurbishment and up gradation of BHEL and Non BHEL make Oil Rigs
  - DC Oil rig motors of all required ranges
  - Oil rig alternators of all required ranges
- Well heads and X-mas Trees up to 10000 psi, Mud Line Suspension, Choke and Kill manifold, CBM Wellheads, DSPM H- Manifold Assembly, Mud valves, ESP hangers, Block type X-mas Trees & Landing Bases for Casing Heads.

### Oil Rig Controls

- AC Power Control Room
- DC Power Control Room
- AC Power Pack upto 1450 kVA for DG sets
  - AC Control Module
  - DC Control Module
- Driller's Console
- Cable set, cable trays, cable box and crew room for oil rigs.
- Mobile lightening Tower, Rig Lightening Tower
- DG set for Oil rig application (63/ 250/ 380/ 500 KVA)

- Statcom for power factor improvement in AC SCR Rigs.

## FABRICATED EQUIPMENT AND MECHANICAL PACKAGES

- Air separation Units for extraction of N<sub>2</sub>, O<sub>2</sub> and Argon etc.
- Cryogenic systems for liquid N<sub>2</sub>, O<sub>2</sub> and Argon
- Cryogenic storage tanks, Mounded storage systems and storage spheres
- Column and Reactors for Petrochemical plants
- Pressure Vessels, Shell and Tube type and Air Fin Type Heat Exchangers
- Fired Heaters
- Purge Gas Recovery Unit for Fertilizer Industry

## INDUSTRIAL SYSTEMS

- Complete Coal Handling Plant and Ash Handling Plant including Civil & Structural, Mechanical, Electrical works and Automation systems
- Complete Mine Winder Systems
- CompleteElectrics, Drives, Controls & Automation Systems for Processing & Compacting of Raw Materials, Iron Making, Primary & Secondary Steel Making, Casters & steel Finishing like Mills & process Lines for both long products & flat products
- Complete Raw Material Handling System including Civil & Structural, Mechanical, Electrical and Automation systems for Steel and other industries
- Complete Electrics & Automation Systems for High Current Rectifiers for Aluminium Smelters and Processing Mills for Aluminium Plants
- Automated Storage & Retrieval Systems (ASRS)
- Balance of Plant (BOP) for Hydro power plants.

# Glossary & Abbreviations

AIS	Air Insulated Substation	M&A	Merger & Acquisitions
AHWR	Advanced Heavy Water Reactor	MEMU	Mainline Electric Multiple Unit
APPDCL	Andhra Pradesh Power Development Company Limited	MHI&PE	Ministry of Heavy Industries & Public Enterprises
BSE	Bombay Stock Exchange	MoEF	Ministry of Environment & Forests
BSPGCL	Bihar State Power Generation Company Limited	MoU	Memorandum of Understanding
C&I	Control & Instrumentation	MUs	Million Units
CCPP	Combined Cycle Power Plant	NPCIL	Nuclear Power Corporation of India Limited
CEA	Central Electricity Authority	NSE	National Stock Exchange
CFBC	Circulating Fluidised Bed Combustion	NSPCL	NTPC-SAIL Power Company Private Limited
CISF	Central Industrial Security Force	NTPC	National Thermal Power Corporation
CLW	Chittaranjan Locomotive Works	OA	Operational Availability
CMIE	Centre for Monitoring Indian Economy	OECD	Organisation for Economic Co-operation and Development
CPSE	Central Public Sector Enterprise	OEM	Original Equipment Manufacturer
CSR	Corporate Social Responsibility	OHPC	Odisha Hydro Power Corporation
CVC	Chief Vigilance Commission	ONGC	Oil and Natural Gas Corporation Limited
DEMU	Diesel Electric Multiple Unit	OPGCL	Odisha Power Generation Corporation
DETC	Diesel Electric Tower Car	PGCIL	Power Grid Corporation of India Limited
DSIR	Department of Scientific and Industrial Research	PLM	Product Lifecycle Management
DVC	Damodar Valley Corporation	PSEs	Public Sector Enterprises
E&C	Engineering & Construction	PSPCL	Punjab State Power Corporation Limited
ED	Executive Director	R&D	Research & Development
EHV	Extra High Voltage	R&M	Renovation & Modernisation
EMU	Electric Multiple Unit	RCF	Rail Coach Factory
EPC	Engineering, Procurement & Construction	RPCL	Raichur Power Company Limited
ESP	Electrostatic Precipitator	S&P	Standard & Poor's
FACTS	Flexible Alternating Current Transmission System	SAIL	Steel Authority of India
FD Fan	Forced Draft Fan	SCOPE	Standing Conference of Public Enterprises
FDI	Foreign Direct Investment	SCR	Silicon Controlled Rectifier
GETCO	Gujarat Energy Transmission Corporation	SD	Sustainable Development
GIS	Gas Insulated Substation	SEBI	Securities and Exchange Board of India
GSECL	Gujarat State Electricity Corporation Limited	SG	Steam Generator
GTG	Gas Turbine Generator	SPV	Solar Photo Voltaic
GTO	Gate turn-off Thyristor	STATCOM	Static Synchronous Compensator
HP Turbine	High Pressure Turbine	STPP	Super Thermal Power Plant
HVDC	High Voltage Direct Current	TANGEDCO	Tamil Nadu Generation and Distribution Corporation
ICF	Integral Coach Factory	TG	Turbine & Generator
ID Fan	Induced Draft Fan	TL&JV	Technology Licensing & Joint Venture
IEA	International Energy Agency	TPS	Thermal Power Station
IGBT	Insulated-Gate Bipolar Transistor	TSGENCO	Telangana Power Generation Corporation
IGCAR	Indira Gandhi Centre for Atomic Research	UHVAC	Ultra High Voltage AC
IOCL	Indian Oil Corporation Limited	UMPP	Ultra Mega Power Project
IPR	Intellectual Property Right	UPJVNL	UP Jal Vidyut Nigam Limited
IR	Indian Railway	UPRVNL	Uttar Pradesh Rajya Vidyut Utpadan Nigam
ISO	International Organization for Standardization	VCU	Vehicle Control Unit
ISRO	Indian Space Research Organisation	VFD	Variable Frequency Drive
KBUNL	Kanti Bijlee Utpadan Nigam Limited	WAG	W (Broad gauge), A (AC traction), G (Goods duty)
LCA	Light Combat Aircraft	WBPDC	West Bengal Power Development Corporation
LP Turbine	Low Pressure Turbine		

## Bharat Heavy Electricals Limited

(CIN: L74899DL1964GOI004281)

Regd. Office: BHEL House, Siri Fort, New Delhi-110049

Phone: 011-66337000, Fax: 011-26493021

Website: www.bhel.com, E-mail: shareholderquery@bhel.in

Notice is hereby given that the 52<sup>nd</sup> Annual General Meeting of the Members of BHARAT HEAVY ELECTRICALS LIMITED will be held on Thursday, the 22<sup>nd</sup> September, 2016 at 10 A.M. at Manekshaw Centre, Parade Road, Khyber Lines, Delhi Cantt., Delhi-110010, to transact the following businesses:

### ORDINARY BUSINESS

1. To receive, consider and adopt the Audited Standalone and Consolidated Financial Statements of the Company for the Financial Year ended 31<sup>st</sup> March, 2016 together with the Directors' Report and Auditors' Report thereon.
2. To declare dividend for the financial year 2015-16.
3. To appoint a Director in place of Shri D. Bandyopadhyay (DIN: 07221633), who retires by rotation and being eligible, offers himself for re-appointment.
4. To appoint a Director in place of Shri Amitabh Mathur (DIN: 07275427), who retires by rotation and being eligible, offers himself for re-appointment.
5. To authorize the Board of Directors to fix the remuneration of the Auditors for the year 2016-17.

### SPECIAL BUSINESS

6. To consider and, if thought fit, to pass with or without modification, the following resolution as an **Ordinary Resolution**:

"RESOLVED THAT pursuant to the provisions of Section 148 and other applicable provisions of the Companies Act, 2013 read with the Companies (Audit and Auditors) Rules, 2014 (including any statutory modification(s) or re-enactment thereof, for the time being in force), the remuneration of the Cost Auditors appointed by the Board of Directors of the Company to conduct the audit of the cost records of the Company for the Financial Year ended on 31<sup>st</sup> March, 2017 as set out in the Statement annexed to the Notice convening this Meeting, be and is hereby ratified by the shareholders of the Company."

"RESOLVED FURTHER THAT the Board of Directors of the Company be and is hereby authorized to do all

such acts, deeds and things as may be necessary, proper or expedient to give effect to this resolution."

7. To consider and, if thought fit, to pass with or without modification, the following resolution as an **Ordinary Resolution**:

"RESOLVED THAT Shri Subrata Biswas (DIN: 07297184), who was appointed as an Additional Director pursuant to Article 67(iv) of the Articles of Association of the Company read with Section 161 (1) of the Companies Act, 2013 w.e.f. 24.09.2015 to hold Office upto the date of this Annual General Meeting and in respect of whom, the Company has received a notice in writing, from the Director himself pursuant to the provisions of Section 160 (1) of the Companies Act, 2013, be and is hereby appointed as a Director of the Company, liable to retire by rotation."

8. To consider and, if thought fit, to pass with or without modification, the following resolution as an **Ordinary Resolution**:

"RESOLVED THAT Shri Rajesh Kishore (DIN: 02425323), who was appointed as an Additional Director pursuant to Article 67(iv) of the Articles of Association of the Company read with Sections 149 and 161 (1) of the Companies Act, 2013 w.e.f. 18.12.2015 to hold Office upto the date of this Annual General Meeting and in respect of whom, the Company has received a notice in writing, from the Director himself pursuant to the provisions of Section 160 (1) of the Companies Act, 2013, be and is hereby appointed as an Independent Director of the Company."

9. To consider and, if thought fit, to pass with or without modification, the following resolution as an **Ordinary Resolution**:

"RESOLVED THAT Shri Keshav N. Desiraju (DIN: 07372233), who was appointed as an Additional Director pursuant to Article 67(iv) of the Articles of Association of the Company read with Sections 149 and 161 (1) of the Companies Act, 2013 w.e.f. 18.12.2015 to hold Office upto the date of this Annual General Meeting and in respect of whom, the Company has received a notice in writing, from the Director himself pursuant to the provisions of Section 160 (1) of the Companies Act, 2013, be and is hereby appointed as an Independent Director of the Company."

10. To consider and, if thought fit, to pass with or without modification, the following resolution as an **Ordinary Resolution:**

“RESOLVED THAT Shri R. Swaminathan (DIN: 01811819), who was appointed as an Additional Director pursuant to Article 67(iv) of the Articles of Association of the Company read with Sections 149 and 161 (1) of the Companies Act, 2013 w.e.f. 18.12.2015 to hold Office upto the date of this Annual General Meeting and in respect of whom, the Company has received a notice in writing, from the Director himself pursuant to the provisions of Section 160 (1) of the Companies Act, 2013, be and is hereby appointed as an Independent Director of the Company.”

11. To consider and, if thought fit, to pass with or without modification, the following resolution as an **Ordinary Resolution:**

“RESOLVED THAT Shri T. Chockalingam (DIN: 07428614), who was appointed as an Additional Director pursuant to Article 67(iv) of the Articles of Association of the Company read with Section 161 (1) of the Companies Act, 2013 w.e.f. 11.02.2016 to hold Office upto the date of this Annual General Meeting and in respect of whom, the Company has received a notice in writing, from the Director himself pursuant to the provisions of Section 160 (1) of the Companies Act, 2013, be and is hereby appointed as a Director of the Company, liable to retire by rotation.”

12. To consider and, if thought fit, to pass with or without modification, the following resolution as an **Ordinary Resolution:**

“RESOLVED THAT Dr. Subhash Chandra Pandey (DIN: 01613073), who was appointed as an

Additional Director pursuant to Article 67(iv) of the Articles of Association of the Company read with Section 161 (1) of the Companies Act, 2013 w.e.f. 31.03.2016 to hold Office upto the date of this Annual General Meeting and in respect of whom, the Company has received a notice in writing, from the Director himself pursuant to the provisions of Section 160 (1) of the Companies Act, 2013, be and is hereby appointed as a Director of the Company.”

13. To consider and, if thought fit, to pass with or without modification, the following resolution as an **Ordinary Resolution:**

“RESOLVED THAT Shri Akhil Joshi (DIN: 06604954), who was appointed as an Additional Director pursuant to Article 67(iv) of the Articles of Association of the Company read with Section 161 (1) of the Companies Act, 2013 w.e.f. 10.08.2016 to hold Office upto the date of this Annual General Meeting and in respect of whom, the Company has received a notice in writing, from the Director himself pursuant to the provisions of Section 160 (1) of the Companies Act, 2013, be and is hereby appointed as a Director of the Company, liable to retire by rotation.”

By Order of the Board of Directors



(I.P. Singh)

Company Secretary

Place: New Delhi

Dated: August 16, 2016

**NOTES: -**

1. A MEMBER ENTITLED TO ATTEND AND VOTE AT THE MEETING IS ENTITLED TO APPOINT A PROXY TO ATTEND AND VOTE INSTEAD OF HIMSELF AND THE PROXY NEED NOT BE A MEMBER OF THE COMPANY. A PERSON APPOINTED AS PROXY SHALL ACT ON BEHALF OF SUCH MEMBER OR NUMBER OF MEMBERS NOT EXCEEDING FIFTY AND HOLDING IN AGGREGATE NOT MORE THAN TEN PERCENT OF THE TOTAL SHARE CAPITAL OF THE COMPANY CARRYING VOTING RIGHTS. HOWEVER, AS PER RULE 19(2) PROVISIO OF THE COMPANIES (MANAGEMENT AND ADMINISTRATION) RULES, 2014, A MEMBER HOLDING MORE THAN 10% OF TOTAL SHARE CAPITAL OF THE COMPANY CARRYING VOTING RIGHTS MAY APPOINT A SINGLE PERSON AS PROXY AND SUCH PERSON SHALL NOT ACT AS PROXY FOR ANY OTHER PERSON OR SHAREHOLDER. PROXY FORM DULY COMPLETED SHOULD BE DEPOSITED AT THE REGISTERED OFFICE OF THE COMPANY NOT LESS THAN FORTY-EIGHT HOURS (48 HOURS) BEFORE THE SCHEDULED TIME OF THE ANNUAL GENERAL MEETING. BLANK PROXY FORM IS ENCLOSED.
2. Corporate Members are requested to send a duly certified copy of the Board Resolution/ Power of Attorney authorizing their representative to attend and vote on their behalf at the Annual General Meeting.
3. Relevant Explanatory Statement pursuant to Section 102(1) of the Companies Act, 2013, in respect of Special Business, as set out above is annexed hereto.
4. S/ shri D. Bandyopadhyay and Amitabh Mathur, Directors, retire by rotation and being eligible, offer themselves for re-appointment. However, as per the terms of their appointment, the tenure of S/ shri D. Bandyopadhyay and Amitabh Mathur as Directors of the Company will expire on 31<sup>st</sup> August, 2019 and 31<sup>st</sup> May, 2018 respectively. Brief resume of each of the Directors proposed for re-appointment is given at Annexure to the Notice.
5. The Register of Members and Share Transfer books of the Company shall remain closed from Friday, 16<sup>th</sup> September, 2016 to Thursday, 22<sup>nd</sup> September, 2016 (both days inclusive), for determining names of the shareholders eligible for final dividend, if declared, at the meeting.
6. Members are advised to submit their National Electronic Clearing Service/Electronic Clearing Service (NECS/ECS) mandate in the form (given elsewhere in the Annual Report) duly filled in and signed, to enable the Company to make remittance by means of NECS/ECS.
7. The Board of Directors has recommended a final dividend of 20% on the Paid-up Equity Share Capital (₹ 0.40 per share) of the Company for the year 2015-16.
8. The final dividend on the Equity Shares as recommended by the Board of Directors for the year ended 31<sup>st</sup> March, 2016, if approved by the shareholders at the Annual General Meeting, will be payable within 30 days from the date of declaration of dividend i.e. on or before 21<sup>st</sup> October, 2016, to those shareholders whose name appear:-
  - i. As Beneficial Owners of shares as at the closure of business hours on 15<sup>th</sup> September, 2016 as per the list to be furnished by NSDL/ CDSL in respect of the shares held in the Electronic mode; and
  - ii. As Members in the Register of Members of the Company after giving effect to all valid share transfer requests in physical form which are lodged with the Company/ RTA on or before the close of business hours on 15<sup>th</sup> September, 2016.
9. Pursuant to Section 205A(5) read with Section 205C of the Companies Act, 1956, the dividend amounts which remain unpaid /unclaimed for a period of 7 years, are required to be transferred to the "Investor Education and Protection Fund" constituted by the Central Government. After that, there remains no claim of the members whatsoever on the said amount. Accordingly, the final dividend for the financial year 2008-09 and interim dividend for financial year 2009-10, which remains unclaimed, are proposed to be transferred to the said account on 23<sup>rd</sup> October, 2016 and 22<sup>nd</sup> February, 2017 respectively.  
Members who have not claimed/ encashed their Dividend so far for the financial year ended 31<sup>st</sup> March, 2009 or any subsequent financial year(s) may approach the Company for obtaining payments thereof before expiry of the stipulated 7 years period.
10. Members may avail facility of nomination in terms of section 72 of the Companies Act, 2013, by nominating any person to whom their shares in the Company shall vest in the event of their death.
11. Pursuant to Section 139 (5) read with Section 142 (1) of the Companies Act, 2013, the Auditors of a Government Company are appointed by the Comptroller and Auditor General (C&AG) of India and their remuneration is fixed by the Company in the Annual General Meeting. The shareholders may authorize the Board to fix up an appropriate remuneration of Auditors for the year 2016-17 as may be deemed fit by the Board.



12. Members are requested to notify immediately any change of address and other relevant correspondence including NECS/ ECS details and submission of Permanent Account Number (PAN):-
  - i. to their Depository Participants (DPs) in respect of their electronic share accounts; and
  - ii. to the Company at its registered office or the Registrar & Share Transfer Agent, M/s. Karvy Computershare Private Ltd. (Karvy Selenium Tower B, Plot 31-32, Gachibowli, Financial District, Nanakramguda, Hyderabad - 500032) in respect of their physical shares, if any, quoting their folio number, Banker's name and account number to ensure prompt and safe receipt of dividend warrants.
13. Members who hold shares in dematerialized form are requested to write their Client ID and DP ID Numbers and those who hold shares in physical form are requested to write their Folio Number in the attendance slip for attending the Meeting. However, entry to the Auditorium will be strictly on the basis of entry slip, available at the counters at the venue and to be exchanged with attendance slip.
14. In compliance with section 108 of the Companies Act, 2013, read with Rule 20 of the Companies (Management and Administration) Amendment Rules, 2015 and Regulation 44 of the Listing Regulations, the Company is pleased to provide the facility to members to exercise their right to vote by electronic means through M/s Karvy Computershare Private Limited. The members, whose names appear in the Register of Members / list of Beneficial Owners as on Thursday, September 15, 2016 will be eligible to vote for the purpose of E-voting/ AGM and a person who is not a member as on the cut-off date should treat this notice for information purposes only. The e-voting period will commence from Monday, September 19, 2016 at 9.00 a.m. and will end at 5.00 p.m. on Wednesday, September 21, 2016. The e-voting module will be blocked on September 21, 2016, at 5.00 p.m. The members desiring to vote through electronic mode may refer to the detailed procedure on e-voting sent alongwith necessary user-id & password and attached with this Notice. Once the vote on a resolution is cast by the shareholder, the shareholder shall not be allowed to change it subsequently. The voting right of shareholders shall be in proportion to their share in the paid up equity share capital of the Company as on the cut-off date being, September 15, 2016.
15. The facility for voting through ballot paper shall be made available at the AGM and members attending the meeting who have not cast their vote by remote e-voting shall be able to exercise their right at the meeting through ballot paper.
16. The members who have cast their vote by remote e-voting prior to the AGM may also attend the meeting but shall not be entitled to cast their vote again.
17. The Company has appointed Ms. Ashu Gupta of M/s Ashu Gupta & Co., Practicing Company Secretary, to act as a scrutinizer, to scrutinize the e-voting process in a fair and transparent manner. The Scrutinizer shall, immediately after the conclusion of voting at the AGM, first count the votes cast at the meeting, thereafter unblock the votes cast through e-voting in the presence of at least two witnesses not in the employment of the Company and make, not later than three days of conclusion of the AGM, a Consolidated Scrutinizer's Report of the total votes cast in favour or against, if any, to the Chairman of the Company. The results along with the Scrutinizer's Report shall be available on the Company's website (www.bhel.com) and on the website of the agency immediately after the declaration of result by the Chairman/ person authorized by him in writing. The results shall also be immediately forwarded to the Stock Exchanges.
18. Members are requested to:-
  - i. bring their Attendance Slip duly completed and signed at the venue of the meeting along with Photo-id proof.
  - ii. quote their Folio/ DP & Client ID Nos. in all correspondence.
  - iii. note that no briefcase or bag will be allowed to be taken inside the auditorium for security reasons.
  - iv. note that no gifts will be distributed at the AGM.

By order of the Board of Directors



(I.P. Singh)

Company Secretary

Place: New Delhi

Dated: August 16, 2016

## ANNEXURE TO THE NOTICE

### EXPLANATORY STATEMENT PURSUANT TO SECTION 102(1) OF THE COMPANIES ACT, 2013

The following explanatory statement sets out the material facts relating to the business mentioned in Item Nos. 6 to 13 of the accompanying Notice dated August 16, 2016.

#### ITEM NO. 6

Section 148 of the Companies Act, 2013 read with the Companies (Audit and Auditors) Rules, 2014 requires remuneration of the cost auditors as approved by the Board to be ratified by shareholders subsequently.

Based on the recommendation of Audit committee, the Board of Directors in its meeting held on 16<sup>th</sup> July, 2016 has approved the names of seven Cost Accountant/Firms for appointment for a total remuneration of ₹ 13.37 lakhs as detailed under:

₹ Lakhs			
Sl. No.	Name of the Cost Auditors	Unit	Remuneration of 2016-17
1	M/s Jugal K. Puri & Associates, Delhi (Lead Cost Auditor)	Consolidation Audit Report	0.83
		HEEP Haridwar	1.65
		CFFP Haridwar	0.33
2	M/s Sanjay Kasliwal & Associates, Bhopal	Jhansi	0.66
		HERP Varanasi	0.33
		Bhopal	1.65
3	M/s Narasimha Murthy & Co., Hyderabad	Hyderabad	1.65
4	M/s RKMS & Associates, Chennai	Trichy	2.20
		BAP Ranipet	1.10
5	M/s Vishwanath Bhat & Co., Bengaluru	EPD Bengaluru	0.44
		EDN Bengaluru	0.55
6	M/s Sunil Singh & Co., Lucknow	IVP Goindwal	0.33
		FP Jagdishpur	0.22
		CFP Rudrapur	0.33
		IP Jagdishpur	0.44
		CSU Jagdishpur	0.22
7	M/s Velamarthi & Associates, Visakhapatnam	HPVP Visakhapatnam	0.44
<b>Total</b>			<b>13.37</b>

Accordingly, members are requested to ratify the remuneration payable to the Cost Auditors for the Financial Year ended on 31<sup>st</sup> March, 2017.

None of the Directors or Key Managerial Personnel of the Company or their relatives is in any way, concerned or interested, financially or otherwise, in the resolution set out at item no. 6.

The Board of Directors recommends the resolution for the approval of the Shareholders.

#### ITEM NO. 7

Shri Subrata Biswas (DIN: 07297184), aged 57 years, was appointed as Director (Engineering, Research & Development) on the Board of BHEL on 24<sup>th</sup> September, 2015.

An Electronics Engineer from BHU-IT (now IIT-Varanasi) and an MBA from the Indian Institute of Management, Kolkata, Shri Biswas also completed a Fellowship Program from Purdue University, USA.

Shri Biswas has nearly 35 years of diversified and versatile professional experience through working in major R&D segments of BHEL. He was involved in the formulation and finalisation of BHEL's R&D Policy in 2013 and is presently overseeing its implementation at all units/divisions of the company.

Starting his career in BHEL as an Engineer Trainee at BHEL's Corporate Research & Development division, Hyderabad in 1981, Shri Biswas has put in years of efforts towards company-wide increase in patent applications, R&D investment, commercialization of new products & processes, interaction with all IITs and Indian/ foreign academia for collaborative R&D. He was instrumental in organizing the meetings of the R&D Advisory Council consisting of eminent scientists, policy makers and academicians, and interaction with institutions like CSIR, ISRO, DRDO and IITs for accelerated R&D. As a result of his efforts, DSIR recognition of 12 R&D/ RPD units of BHEL has been obtained for R&D functions.

Shri Biswas spearheaded the development of products like automated guided vehicle, flexible manufacturing system for automation in production shop floor, automated storage and retrieval system, robotic welding systems for manufacturing of compressor components, RFID and GPS based systems for material tracking at units and sites, tracking system for Solar PV arrays, fuel cells, etc.

To his credit, Shri Biswas has more than 30 patents/ copyrights granted/ applied for, and over 40 technical

papers published/presented at national/international journals and conferences.

Shri Subrata Biswas has hands on experience in developing and commissioning of new products in the area of manufacturing automation like automated material handling/storage system, RFID based tracking and control, project Management and monitoring functions leading to timely completion of assignments etc. He has developed and commissioned GPS based consignment tracking system. He was also responsible for networking, communication and supervisory controls for group of CNC machines for improving productivity. In his current role, Shri Biswas is also responsible for networking with Academia and R&D organisations for widening of R&D activities of BHEL.

Shri Biswas' appointment is upto 28.02.2019 or until further orders whichever event occurs earlier in the pay scale of ₹ 75,000-1,00,000 p.m. on terms & conditions approved by Government of India.

Shri Biswas does not hold any shares in BHEL and he does not have any relationship with other Directors/ Manager/ KMP of Company.

Shri Biswas has attended all the Board Meetings (4) held during his tenure upto 31.03.2016.

By virtue of Section 161 of the Companies Act, 2013 read with Article 67(iv) of the Articles of Association of the Company, Shri Subrata Biswas holds office till the date of ensuing Annual General Meeting and is eligible for appointment. As per requirement of Section 160 of the Companies Act, 2013, the Company has received a Notice in writing, proposing candidature of Shri Subrata Biswas for the Office of Director of the Company.

Except Shri Subrata Biswas, being an appointee, none of the Directors or Key Managerial Personnel of the Company or their relatives is in any way, concerned or interested, financially or otherwise, in the resolution set out at item no. 7.

The Board of Directors commends the resolution for approval of the Shareholders.

#### ITEM NO. 8

Shri Rajesh Kishore (DIN: 02425323), aged 61 years, was inducted as Part-time Non-Official Director on the Board of BHEL on 18<sup>th</sup> December, 2015.

Shri Rajesh Kishore is a retired IAS officer of 1980 batch and had been allotted to the Gujarat Cadre.

He has held many significant positions in both the central and state governments since the inception of his career in public service. He had been empanelled to the rank of a Secretary to the Government of India in October 2013. He had last worked as the Secretary General of the National Human Rights Commission in Delhi since July 2014.

He has two masters' degrees in physics and management (from Indian Institute of Management, Ahmedabad) as well as a diploma in social development.

While in Government service, he has held various positions in both the Government of Gujarat and the Government of India in various areas, namely, human rights, health and family welfare, food security, disaster management, land administration, science and technology development, indirect taxes, small industries, finance, gender and development etc. During his career of about 35 years in public service, there has been considerable exposure to various aspects of governance. During this experience in Gujarat and the Union Governments, he has developed in-depth insights and sensitivities into various aspects of public governance.

Shri Rajesh Kishore's appointment is upto 30.11.2018 or until further orders whichever event occurs earlier. As an Independent Director, he is entitled to sitting fee for Board Meetings and Board Level Committee Meetings attended by him.

Shri Kishore does not hold any shares in BHEL and he does not have any relationship with other Directors/ Manager/ KMP of Company.

Shri Kishore has attended all the Board Meetings (3) held during his tenure upto 31.03.2016.

By virtue of Section 161 of the Companies Act, 2013 read with Article 67(iv) of the Articles of Association of the Company, Shri Rajesh Kishore holds office till the date of ensuing Annual General Meeting and is eligible for appointment. As per requirement of Section 160 of the Companies Act, 2013, the Company has received a Notice in writing, proposing candidature of Shri Rajesh Kishore for the Office of Independent Director of the Company.

The Company has received a declaration from Shri Rajesh Kishore that he meets the criteria of independence as prescribed both under sub-section (6) of Section 149 of the Companies Act, 2013 and under Regulation 16 of the Listing Regulations. Keeping in view his vast expertise and knowledge, it

will be in the interest of the Company that Shri Rajesh Kishore is appointed as an Independent Director. In the opinion of the Board, Shri Rajesh Kishore fulfills the conditions specified in the Companies Act, 2013 and Rules made thereunder for his appointment as an Independent Director of the Company and is independent of the Management.

Except Rajesh Kishore, being an appointee, none of the Directors or Key Managerial Personnel of the Company or their relatives is in any way, concerned or interested, financially or otherwise, in the resolution set out at item no. 8.

The Board of Directors commends the resolution for approval of the Shareholders.

### ITEM NO. 9

Shri Keshav N. Desiraju (DIN: 07372233), aged 61 years, was inducted as Part-time Non-Official Director on the Board of BHEL on 18<sup>th</sup> December, 2015.

He is a retired IAS officer of 1978 batch, Uttarakhand cadre. He was Secretary, Department of Consumer Affairs at the time of his retirement. Shri Desiraju is Master of Arts (Economics & Sociology) from University of Cambridge and Master in Public Administration from Harvard University.

In 2013, Shri Desiraju was Secretary, Health & Family Welfare to the Government of India. Earlier in his career, over 2000-2002 as Secretary, Power and Irrigation in the newly created State of Uttarakhand, he was responsible for the division of assets between the States of Uttar Pradesh and Uttarakhand, the unbundling of the sector and the establishment of the power distribution and hydroelectric development corporations in the new state.

Post retirement, Shri Desiraju continues to remain engaged with issues in public health, particularly mental illness and mental health, primary health care and community health, and serves on the board of several non-profit organizations in the sector.

Shri Desiraju is also an Independent Director on the Board of Tamil Nadu Infrastructure Fund Management Corporation Limited and Chairman of its Audit Committee.

Shri Desiraju's appointment is upto 30.11.2018 or until further orders whichever event occurs earlier. As an Independent Director, he is entitled to sitting fee for Board Meetings and Board Level Committee Meetings attended by him.

Shri Keshav N. Desiraju does not hold any shares in BHEL and he does not have any relationship with other Directors/ Manager/ KMP of Company.

Shri Desiraju has attended all the Board Meetings (3) held during his tenure upto 31.03.2016.

By virtue of Section 161 of the Companies Act, 2013 read with Article 67(iv) of the Articles of Association of the Company, Shri Keshav N. Desiraju holds office till the date of ensuing Annual General Meeting and is eligible for appointment. As per requirement of Section 160 of the Companies Act, 2013, the Company has received a Notice in writing, proposing candidature of Shri Keshav N. Desiraju for the Office of Independent Director of the Company.

The Company has received a declaration from Shri Keshav N. Desiraju that he meets the criteria of independence as prescribed both under sub-section (6) of Section 149 of the Companies Act, 2013 and under Regulation 16 of the Listing Regulations. Keeping in view his vast expertise and knowledge, it will be in the interest of the Company that Shri Keshav N. Desiraju is appointed as an Independent Director. In the opinion of the Board, Shri Keshav N. Desiraju fulfills the conditions specified in the Companies Act, 2013 and Rules made thereunder for his appointment as an Independent Director of the Company and is independent of the Management.

Except Keshav N. Desiraju, being an appointee, none of the Directors or Key Managerial Personnel of the Company or their relatives is in any way, concerned or interested, financially or otherwise, in the resolution set out at item no. 9.

The Board of Directors commends the resolution for approval of the Shareholders.

#### ITEM NO. 10

Shri R. Swaminathan (DIN: 01811819), aged 60 years, was inducted as Part-time Non-Official Director on the Board of BHEL on 18<sup>th</sup> December, 2015.

He is a retired Indian Foreign Officer (IFS) of the 1980 batch. He was Secretary to the Government of India in the Ministry of External Affairs (MEA) at the time of his retirement.

He holds a Bachelor degree (Honours) in Civil Engineering from the Madras University, Masters Diploma in Industrial Engineering from the National Productivity Council (NPC) and a Diploma in Arabic language from the American University in Cairo. As part of his Industrial Engineering Masters, he did a thesis

on Turnkey Project Management Information Systems at the BHEL power project in Parli, Maharashtra in 1979.

Ambassador Swaminathan has extensive experience in international relations including economic and commercial diplomacy, project management, Development issues including international aid and LoCs, public diplomacy, administration, Atomic Energy, passport and consular services and Arab issues in a long career of 35 years.

As Secretary to the Government of India, he was responsible for all the Latin American countries and Canada as well as Consular, Passports and Visas Divisions in MEA. He was also the Director General of Inspections of MEA. Prior to this, he was Ambassador to Austria and Montenegro; Governor of India to the International Atomic Energy Agency (IAEA); Permanent Representative of India to UNIDO, UNODC, Outer Space Organization and other UN Offices in Vienna. He has also served as Indian Ambassador to Egypt and the Arab League, Joint Secretary and Chief Passport Officer of India and Joint Secretary for Projects in MEA. He served in the IAEA Secretariat in Vienna heading the Policy Planning and Coordination Division. He was Counsellor and Head of the Commercial Department in the Indian High Commission in Sri Lanka, Deputy Chief of Mission in the Indian Embassy in Bhutan, Secretary of the Atomic Energy Commission and Deputy Secretary in the Department of Atomic Energy, Government of India, First Secretary in the Indian Embassy in France, Second Secretary in the Indian Embassy in Qatar and Third Secretary in the Indian Embassy in Egypt. Prior to joining IFS, he was Assistant Director/Consultant at NPC.

Important achievements in his career include launching of the Passport Seva Project, one of the largest e-governance initiatives of the Government of India, Outsourcing of passport and visa services in Indian Missions, evacuation of a large number of distressed Indian Nationals from Libya, Egypt and Iraq, part of the IAEA Secretariat which received Nobel Peace Prize in 2005 and the first ever Free Trade Agreement for India which was concluded with Sri Lanka.

Shri Swaminathan's appointment is upto 30.11.2018 or until further orders whichever event occurs earlier. As an Independent Director, he is entitled to sitting fee for Board Meetings and Board Level Committee Meetings attended by him.



Shri R. Swaminathan does not hold any shares in BHEL and he does not have any relationship with other Directors/ Manager/ KMP of Company.

Shri Swaminathan has attended all the Board Meetings (3) held during his tenure upto 31.03.2016.

By virtue of Section 161 of the Companies Act, 2013 read with Article 67(iv) of the Articles of Association of the Company, Shri R. Swaminathan holds office till the date of ensuing Annual General Meeting and is eligible for appointment. As per requirement of Section 160 of the Companies Act, 2013, the Company has received a Notice in writing, proposing candidature of Shri R. Swaminathan for the Office of Independent Director of the Company.

The Company has received a declaration from Shri R. Swaminathan that he meets the criteria of independence as prescribed both under sub-section (6) of Section 149 of the Companies Act, 2013 and under Regulation 16 of the Listing Regulations. Keeping in view his vast expertise and knowledge, it will be in the interest of the Company that Shri R. Swaminathan is appointed as an Independent Director. In the opinion of the Board, Shri R. Swaminathan fulfills the conditions specified in the Companies Act, 2013 and Rules made thereunder for his appointment as an Independent Director of the Company and is independent of the Management.

Except R. Swaminathan, being an appointee, none of the Directors or Key Managerial Personnel of the Company or their relatives is in any way, concerned or interested, financially or otherwise, in the resolution set out at item no. 10.

The Board of Directors commends the resolution for approval of the Shareholders.

#### ITEM NO. 11

Shri T. Chockalingam, (DIN: 07428614) aged 58 years, has been inducted as Director (Finance) on the Board of BHEL w.e.f 11<sup>th</sup> February, 2016.

He is a Commerce Graduate from Madura College in Tamil Nadu and a Chartered Accountant of the 1981 batch besides holding additional qualifications in Business Finance from the Institute of Chartered Financial Analysts of India and Diploma in Management from Indira Gandhi National Open University. He started his career in BHEL as Executive Trainee Finance in 1982 at Corporate Office, New Delhi. Prior to his appointment to the Board of Directors, he was heading the Finance function of BHEL's largest manufacturing division at Tiruchirappalli.

His rich and diverse experience of more than 33 years in all aspects of Finance Management gave him true insight into the entire financial operations of BHEL. He played a pivotal role in the successful design, adaptation and implementation of Enterprise Resource Planning (ERP) systems at BHEL Tiruchirappalli. The Unit also registered highest ever Turnover and Profitability under his leadership as Head of Finance. Earlier, the financial turnaround of BHEL's Electroporcelains Division (EPD) and company's Industrial System Group (ISG), at Bengaluru also goes to his credit while he served these units as Head of Finance.

He also oversaw the successful implementation of the biggest ever modernization and capacity augmentation schemes in the history of Trichy Unit and the setting up of BHEL's new greenfield Power Plant Piping Unit at Thirumayam in the Pudukkottai district of Tamil Nadu. A keen proponent of best costing and financial practices that reflect changing business dynamics, he has played a key role in the implementation of a wide range of cost reduction measures aimed at improving profitability in addition to strategic pricing to meet market expectations.

Shri Chockalingam has also undergone an advanced program on Cutting Edge Leadership and Strategic Thinking at the International Management Institute (IMI), New Delhi and the Robert H. Smith School of Management at the University of Maryland, USA.

Shri Chockalingam's appointment is upto 30.11.2017 or until further orders, whichever event occurs earlier, in the pay scale of ₹ 75,000 - ₹ 1,00,000 p.m. on terms and conditions approved by the Government of India.

Shri Chockalingam does not hold any shares in BHEL and he does not have any relationship with other Directors/ Manager/ KMP of Company.

Shri T. Chockalingam has attended one Board meeting held during his tenure upto 31.03.2016.

By virtue of Section 161 of the Companies Act, 2013 read with Article 67(iv) of the Articles of Association of the Company, Shri T. Chockalingam holds office till the date of ensuing Annual General Meeting and is eligible for appointment. As per requirement of Section 160 of the Companies Act, 2013, the Company has received a Notice in writing, proposing candidature of Shri T. Chockalingam for the Office of Director of the Company.

Except Shri T. Chockalingam, being an appointee, none of the Directors or Key Managerial Personnel of the Company or their relatives is in any way, concerned or interested, financially or otherwise, in the resolution set out at item no. 11.

The Board of Directors commends the resolution for approval of the Shareholders.

#### ITEM NO. 12

Dr. Subhash Chandra Pandey (DIN: 01613073) aged 57 years was inducted as Part-time Official Director on the Board of BHEL w.e.f. 31<sup>st</sup> March, 2016.

He holds a doctorate in Mathematics (Ph.D) from Lucknow University in the area of Operations Research (Nonlinear Programming).

He belongs to the 1983 batch of the Indian Audit & Accounts Service and is presently posted as the Additional Secretary and Financial Adviser in the Department of Industrial Policy & Promotion, Ministry of Commerce & Industry. He holds additional charge of the post of AS&FA to the Ministry of Heavy Industries & Public Enterprises.

He has vast experience in the area of public finance, budget & expenditure management and audit, R&D Production and Information Technology. Within the Indian Audit and Accounts Department, he has handled Government Accounts, State Audit, Defence and Commercial Audit, training in Information Technology Audit. He has also served as Consultant to Government of Antigua and Barbuda for three years on budget and accounts matters.

As DS/ Director/ OSD in the Ministry of Finance (10 years) he has been involved in over 13 Union Budgets, 8 State Budgets, 3 Five Year Plans, 3 Finance Commissions, State Reorganization etc. and has been member of many committees of Ministry of Finance and Reserve Bank of India. As Director (Budget), his initiative on the statutory regulation of government debt and deficit led to enactment of the Fiscal Responsibility and Budget Management Act. He was associated with the formulation of the Act and its implementation in early 3 years. In Ministry of Defence, he was involved in financial management of Defence R&D and Production.

Other assignments handled by him include serving as Principal Accountant General (Audit), Jammu & Kashmir. He was working as Director General (Strategic Management) in the Headquarters of

the C&AG of India handling Audit Planning and the interface of the Indian Audit & Accounts Department with external stakeholders.

He is a Part-time Official Director on the Board of HMT Ltd. and is a Government nominee on the Governing Councils of National Institute of Design, Automotive Research Association of India, National Automotive Testing & R&D Infrastructure Project and the National Council for Cement and Building Materials. As a member of DMIC Trust, he is closely involved with overseeing the projects under the Delhi Mumbai Industrial Corridor.

Being a Government of India nominee on the Board of BHEL, Dr. Pandey does not receive any remuneration from BHEL.

Dr. Pandey does not hold any shares in BHEL and he does not have any relationship with other Directors / Manager / KMP of Company.

No Board Meeting was held during the tenure of Dr. Pandey in FY 2015-16.

By virtue of Section 161 of the Companies Act, 2013 read with Article 67(iv) of the Articles of Association of the Company, Dr. Subhash Chandra Pandey holds office till the date of ensuing Annual General Meeting and is eligible for appointment. As per requirement of Section 160 of the Companies Act, 2013, the Company has received a Notice in writing, proposing candidature of Dr. Pandey for the Office of Director of the Company.

Except Dr. Subhash Chandra Pandey, being an appointee, none of the Directors or Key Managerial Personnel of the Company or their relatives is in any way, concerned or interested, financially or otherwise, in the resolution set out at item no. 12.

The Board of Directors commends the resolution for approval of the Shareholders.

#### ITEM No. 13

Shri Akhil Joshi (DIN: 06604954) aged 57 years, has been inducted as Director (Power) on the Board of Bharat Heavy Electricals Limited (BHEL) w.e.f. 10th August, 2016.

He holds a degree in Mechanical Engineering from the Delhi College of Engineering (DCE).

Shri Joshi has diverse experience of over 36 years, working in major segments of BHEL. Prior to his elevation as Director (Power), Shri Joshi was holding charge

as Executive Director (Power Sector- Management Services & HR). He also served as Executive Director of the Corporate Technology Management (CTM) and was responsible for overseeing company-wide technology acquisition and assimilation from world leaders, in-house product development, forging strategic alliances, management of BHEL's various joint ventures and Mergers & Acquisitions.

Shri Joshi has also held various leadership positions in Spares and Services Business of Power Sector, Technology Licensing and International Operations Division of BHEL. As head of Technology Licensing, he successfully led negotiations to acquire key technologies from leading Original Equipment Manufacturers (OEMs) across the globe. The acquisition of these technologies have been crucial in the company maintaining its competitive edge and expanding its range of offerings. During his tenure at the International Operations Division, he played a key role in multi-fold growth of the company's business in highly competitive overseas markets such as the Middle East, South East Asia, Africa, CIS region, the Mediterranean and Europe. He successfully pioneered BHEL's maiden entry into the utility segments of various overseas markets such as Iraq, Vietnam, Belarus, Bangladesh, Cyprus and Egypt.

Shri Joshi's rich experience also includes stints at the Project Management Group (PMG) of the Power Sector and at the company's Heavy Electrical Equipment Plant (HEEP) at Haridwar.

Shri Joshi's appointment is upto 30.09.2018 or until further orders, whichever event occurs earlier, in the pay scale of ₹75,000 - ₹1,00,000 p.m. on terms and conditions approved by the Government of India.

Shri Joshi presently holds 10 equity shares in BHEL and he does not have any relationship with other Directors/ Manager/ KMP of Company.

No Board Meeting was held during the tenure of Shri Joshi in FY 2015-16.

By virtue of Section 161 of the Companies Act, 2013 read with Article 67(iv) of the Articles of Association of the Company, Shri Akhil Joshi holds office till the date of ensuing Annual General Meeting and is eligible for appointment. As per requirement of Section 160 of the Companies Act, 2013, the Company has received a Notice in writing, proposing candidature of Shri Akhil Joshi for the Office of Director of the Company.

Except Shri Akhil Joshi, being an appointee, none of the Directors or Key Managerial Personnel of the

Company or their relatives is in any way, concerned or interested, financially or otherwise, in the resolution set out at item no. 13.

The Board of Directors commends the resolution for approval of the Shareholders.

## DETAILS OF DIRECTORS PROPOSED FOR RE-APPOINTMENT

### SHRI D. BANDYOPADHYAY

Shri D. Bandyopadhyay (DIN: 07221633), aged 56 years, was appointed as Director (Human Resources) on the Board of BHEL w.e.f 1<sup>st</sup> August, 2015.

He is an Electrical Engineer from the Jadavpur University, Kolkata, West Bengal. During a career spanning more than 34 years he has had diversified and versatile professional experience of work encompassing Strategic as well as Operational Management areas in various capacities in BHEL, including Power Projects both in India and abroad.

He started his career in BHEL in 1981, at BHEL-Power Sector-Technical Services, New Delhi as an Engineer Trainee. Thereafter, working with Power Sector-Eastern Region, he spent a considerable period at erection sites in India, acquired and enriched professional experience in Project Implementation and Construction. Shri Bandyopadhyay has diversified experience of execution of a number of Power Projects of Power Sector as well as Industrial Sector in addition to Overseas Projects, which is a unique distinction. He was a key member of the team in successful execution of three consecutive EPC projects of PDO, Oman by spearheading the Engineering, Planning and Project Execution. The completion of these projects on time which also demanded implementation of very high standards of safety and quality, enabled BHEL to secure further orders from overseas, for Gas Turbines.

Shri Bandyopadhyay led Power Sector-Southern Region (PSSR), as Executive Director and PSSR achieved its highest ever turnover of 1623 Crore, (an increase of 12% on YOY) with all-round growth in Value added and PBT of the Region. During his tenure as CEO of PSSR, he steered the Region to Profits from losses of earlier year. Under his leadership, PSSR has achieved highest ever Capacity Addition of 4518.5 MW (17% increase over 2013-14) which enabled BHEL in exceeding the Ministry of Power Target of Capacity Addition by 19%. To meet the challenges of reduced time cycle of projects, he spearheaded a team of creative engineers to introduce new initiatives like Project Planning module, PEMS etc in Power

Sector. Further he was instrumental in implementing Standardised Material Handling Package in Power Sector for the first time. Shri Bandyopadhyay had taken lead role for implementation of one BHEL-ERP drive as Functional Convener for various functions.

As Construction Manager of various domestic as well as International Project sites and also as Executive Director of Power Sector Southern Region (PSSR), Shri Bandyopadhyay has skillfully handled the HR function, involving employees at various levels including Worker Unions, Staff Associations. He has always motivated the workforce especially the Younger Generation keeping in mind the Company's Vision, Mission, Values and Policies. During his tenure as CEO of PSSR, he has emphasized the need for training and given special impetus to the training needs, especially in the area of Quality and Safety. He was instrumental in training of large number of young Engineers in the area of installation of Higher Capacity Turbines & Generators.

As Head of PSSR, he has been instrumental in achieving the targets with regard to CSR by actively getting involved and personally monitoring the CSR activities helping under-privileged children and backward communities.

As Executive Director, Human Resources & Corporate Communication, he dealt with various functions of HR, Management services, CSR, IT, Corporate Communication and HRD.

Shri Bandyopadhyay is the Part-time Chairman on the Board of Dada Dhuniwale Khandwa Power Limited and a Part-time Director on the Board of NTPC-BHEL Power Projects Private Limited.

Shri Bandyopadhyay's appointment is upto 31.08.2019 or until further orders whichever event occurs earlier in the pay scale of ₹ 75,000-1,00,000 p.m. on terms & conditions approved by Government of India.

Shri Bandyopadhyay does not hold any shares in BHEL and he does not have any relationship with other Directors/ Manager/ KMP of Company.

Shri Bandyopadhyay has attended all the Board Meetings (7) held during his tenure upto 31.03.2016.



## SHRI AMITABH MATHUR

Shri Amitabh Mathur (DIN: 07275427), aged 58 years, was inducted as Director (Industrial Systems & Products) on the Board of BHEL w.e.f 1<sup>st</sup> September, 2015.

Shri Amitabh Mathur, is a Mechanical Engineer from Delhi College of Engineering. He also holds a Masters in Business Administration from Faculty of Management Studies, Delhi University.

Shri Amitabh Mathur has more than 35 years of rich, diversified and versatile professional experience through working in major segments of BHEL and has handled a variety of responsibilities in strategic as well as operational areas in various capacities and functions. He started his career in BHEL as an Engineer Trainee in January 1981.

From Jan' 1982 to April 2006 as part of Power Sector Marketing, he had an impressive track record of business development of large sized Coal, Hydel & Gas Power Plants on Turnkey/ EPC basis. Also, during this period Shri Mathur was given a special responsibility to pursue all gas based power projects from Independent Power Producers (IPPs) within the country apart from the regular orders from NTPC. As such, the entire business for Gas based Power Projects (Utilities) from IPPs was centralized with him. His hands-on experience in market intelligence, identifying business opportunities, development of strategies and relationship building helped in securing substantial orders from a broad base of customers comprising IPPs and central/state utilities in a highly competitive environment.

Subsequently, as General Manager (Power Projects) in the apex office, he was responsible for developing, implementing and monitoring strategies pertaining to Power Sector in BHEL. He laid special emphasis on project execution of over 200 sets and close interaction with various policy making agencies viz. Ministry of Power, Central Electricity Authority, Planning Commission, Ministry of Environment, Cabinet Secretariat, Department of Heavy Industries, Ministry of Finance etc. to protect and enhance company's interests. He also steered the revamping of BHEL's "Works Policy" to align it to the requirements of

quick implementation of Projects and was also actively involved in strategic planning towards investment on special tools and plants for expansion of BHEL's overall manufacturing capacity upto 20,000 MW. The impact of his initiatives was reflected in the excellent growth of various key performance parameters during the year 2008-09. This period also saw significant growth in turnover & profits and an all-time high order book for the company.

While overall in-charge of Power Sector Eastern Region (PSER), the largest power sector region of BHEL, Shri Mathur created new benchmarks in project execution of over 40 project sites across the country and abroad both in power as well as industrial segments. He has been a pioneer in introducing change management for increasing the effectiveness of site operations ultimately leading to customer satisfaction and employee engagement. He led various initiatives for speedier execution of projects, improving efficiency of operations and thereby profitability. Steps were also initiated towards enhancing employee morale & productivity by way of improving their living conditions at sites, addressing personnel issues, etc. During his tenure at PSER, a "Technology centre" was created comprising experts from various areas of boiler, turbine, civil, electrical, C&I, etc. to deliberate and document various execution issues and their solutions thus ensuring knowledge sharing and minimising cost of rework. He also got developed various IT based systems for progress reporting, material handling, project management, sub contracting, customer billing, desktop video conferencing (VC), "Talk to ED" VC system for employees, knowledge management portal to reduce the bottlenecks in site execution activities and thereby achieving improved efficiency in various processes involved. Under his able leadership, PSER achieved synchronization and commissioning of over 4500 MW of power projects.

Shri Mathur is the Part-time Chairman on the Board of BHEL-GE Gas Turbine Services Pvt. Limited, Part-time Director on the Board of Dada Dhuniwale Khandwa Power Limited and a Co-opted Member (Non-executive Director) on the Executive Council of Indian Electrical & Electronics Manufacturer's Association. He is the Chairman of the Audit Committee of Dada Dhuniwale Khandwa Power Limited.



Shri Mathur's appointment is upto 31.05.2018 or until further orders whichever event occurs earlier in the pay scale of ₹ 75,000-1,00,000 p.m. on terms & conditions approved by Government of India.

Shri Mathur does not hold any shares in BHEL and he does not have any relationship with other Directors/ Manager/ KMP of Company.

Shri Mathur has attended all the Board Meetings (5) held during his tenure upto 31.03.2016.

By Order of the Board of Directors



(I.P. Singh)  
Company Secretary

Place: New Delhi

Dated: August 16, 2016



## BHARAT HEAVY ELECTRICALS LIMITED

(CIN: L74899DL1964GOI004281)

Regd. Office: BHEL House, Siri Fort, New Delhi-110049

Phone: 011-66337000, Fax: 011-26493021

Website: www.bhel.com, Email: shareholderquery@bhel.in

### ATTENDANCE SLIP

**52<sup>nd</sup> Annual General Meeting to be held on Thursday, 22<sup>nd</sup> day of September, 2016 at 10.00 AM  
at Manekshaw Centre, Parade Road, Khyber Lines, Delhi Cantt., Delhi-110010**

NAME OF THE ATTENDING MEMBER (IN BLOCK LETTERS)	
Folio. / DP ID- CLIENT ID No.	
No. of shares held	
Name of PROXY (IN BLOCK LETTERS, TO BE FILLED IN IF THE PROXY ATTENDS INSTEAD OF THE MEMBER)	

I hereby record my presence at the 52<sup>nd</sup> Annual General Meeting on 22<sup>nd</sup> September, 2016.

Signature of Member/ Proxy

**THIS ATTENDANCE SLIP DULY FILLED IS TO BE HANDED OVER AT THE ENTRANCE OF THE MEETING HALL**



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[Pursuant to Section 105(6) of  
the Companies Act, 2013 and  
Rule 19(3) of the Companies  
(Management and  
Administration) Rules, 2014]

### PROXY FORM

Name of the Member(s):	
Registered Address:	
Folio No/ DP ID- Client Id:	
E-Mail Id:	
No of Shares held:	

I/We, being the member (s) of ..... shares of the above named company, hereby appoint:

1.	Name :		Signature:	
	Address:			
	E-mail Id:			
Or failing him/ her				
2.	Name :		Signature:	
	Address:			
	E-mail Id:			
Or failing him/ her				
3.	Name :		Signature:	
	Address:			
	E-mail Id:			

as my/ our proxy to attend and vote (on a poll) for me/ us and on my/ our behalf at the 52<sup>nd</sup> Annual General Meeting of the Company, to be held on Thursday, the 22<sup>nd</sup> day of September, 2016 at 10:00 A.M. at Manekshaw Centre, Parade Road, Khyber Lines, Delhi Cantt., Delhi-110010 and at any adjournment thereof in respect of such resolutions as are indicated below:

Sl. No.	Resolutions
<b>Ordinary Business</b>	
1.	Adoption of Financial statements of the Company for the year ended 31 <sup>st</sup> March, 2016 together with the Directors' Report and Auditors' Report thereon
2.	Declaration of Dividend for the financial year 2015-16
3.	Re-appointment of Shri D. Bandyopadhyay (DIN: 07221633) who retires by rotation
4.	Re-appointment of Shri Amitabh Mathur (DIN: 07275427) who retires by rotation
5.	Authorize the Board of Directors to fix the remuneration of the Auditors for the year 2016-17
<b>Special Business</b>	
6.	Ratification of Remuneration of Cost Auditors for financial year 2016-17
7.	Appointment of Shri Subrata Biswas (DIN: 07297184) as Director
8.	Appointment of Shri Rajesh Kishore (DIN: 02425323) as Director
9.	Appointment of Shri Keshav N. Desiraju (DIN: 07372233) as Director
10.	Appointment of Shri R. Swaminathan (DIN: 01811819) as Director
11.	Appointment of Shri T. Chockalingam (DIN: 07428614) as Director
12.	Appointment of Dr. Subhash Chandra Pandey (DIN: 01613073) as Director
13.	Appointment of Shri Akhil Joshi (DIN: 06604954) as Director

Signed this..... day of..... 2016

Signature of shareholder (s)

Signature of first proxy holder

Signature of second proxy holder

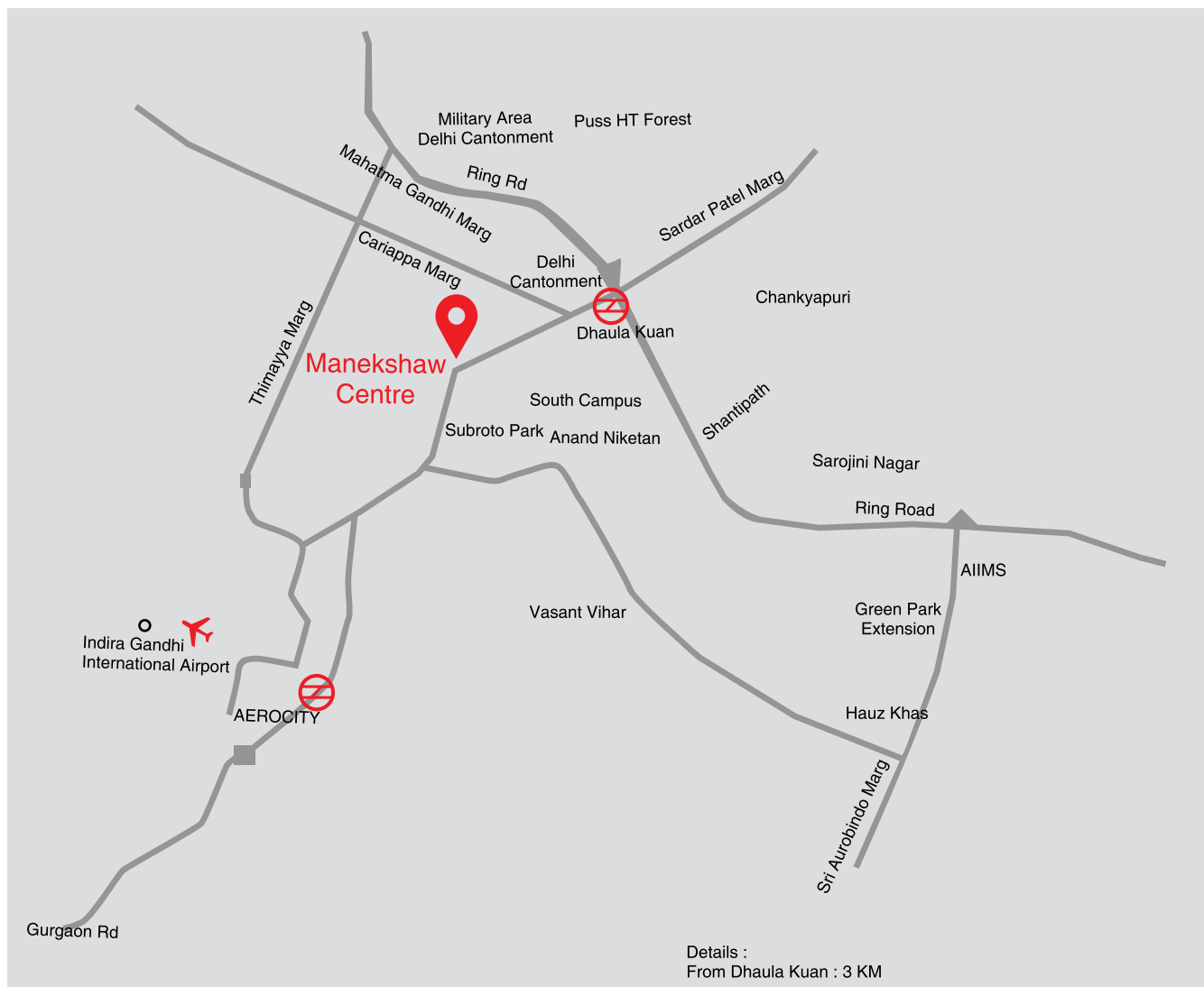
Signature of third proxy holder

- Notes: (a) The form should be signed as per specimen signature registered with the RTA/DP  
(b) This form of proxy in order to be effective should be duly completed and deposited at the Registered Office of the Company, not less than 48 hours before the commencement of the Meeting.

Please  
affix  
Revenue  
Stamp

TEAR HERE

## Route Map for 52<sup>nd</sup> AGM of BHEL





## BHARAT HEAVY ELECTRICALS LIMITED

(CIN: L74899DL1964GOI004281)

Regd. Office: BHEL House, Siri Fort, New Delhi-110049

Phone: 011-66337000, Fax: 011-26493021

Website: www.bhel.com, Email: shareholderquery@bhel.in

Dear Shareholder(s),

### **Re: Payment of dividend through National Electronic Clearing Services (NECS)/Electronic Clearing Services (ECS)**

Pursuant to SEBI (Listing Obligations & Disclosure Requirements) Regulations, 2015, all listed companies shall use any of the electronic modes of payment facility approved by RBI such as ECS/NECS/Direct Credit etc. for payment of dividend.

In case you have not already sent the NECS/ ECS/ Bank Account particulars to our Registrars, viz. M/s Karvy Computershare Pvt. Ltd. or to your Depository Participant (DP) (in case of demat holding), we would request you to provide the said particulars in the format given below to facilitate prompt, safe & correct payment of dividend, if declared in the 52<sup>nd</sup> Annual General Meeting of the Company to be held on 22<sup>nd</sup> September, 2016.

Please ensure that the details submitted by you to the Registrars/ Depository Participant are correct as any error therein could result in the dividend amount being credited to wrong account.

Kindly help us in this endeavour to serve you better.

Yours faithfully

(I.P. Singh)

Company Secretary

**P.S. In case you are holding shares in demat form, kindly advice your Depository Participant to take note of your Bank account particulars/ NECS/ ECS/ Direct Credit mandate.**

## **FORM FOR NECS/ECS MANDATE/ BANK ACCOUNT PARTICULARS**

I / We..... do hereby authorise BHEL/my Depository Participant to

- ☐ Print the following details on my/ our dividend warrant
- ☐ Credit my dividend amount to my Bank account by NECS/ ECS/ Direct Credit
- (Strike out whichever is not applicable)

My/ our Folio No ..... or DP ID No..... Client A/c No .....

### Particulars of Bank Account:

- A. Bank Name : .....
- B. Branch Name : .....
- (Address for Mandate only) : .....
- C. 9 digit code number of the bank & branch as : .....
- appearing on the MICR cheque : .....
- D. IFSC Code : .....
- E. Account Type (Saving/ Current) : .....
- F. Account No as appearing on the cheque book : .....
- G. STD code & Telephone No. of Shareholder : .....

**I / we shall not hold the Company responsible if the NECS/ ECS could not be implemented or the Bank discontinues the NECS/ ECS, for any reason.**



**M/s Karvy Computershare Pvt. Ltd.**  
UNIT: BHEL  
Karvy Selenium Tower B, Plot 31-32,  
Gachibowli Financial District, Nanakramguda,  
**HYDERABAD-500032**

.....  
Signature of the Shareholder

Please attach (i) photocopy of a cheque or a blank cancelled cheque issued by your bank relating to your above account for verifying the accuracy of the 9 digit code number AND (ii) a copy of your **PAN card** with this form.

TEAR HERE





## Bankers

Allahabad Bank  
Andhra Bank  
Bank of Baroda  
Canara Bank  
Corporation Bank  
Central Bank  
Indian Bank  
Indian Overseas Bank  
Oriental Bank of Commerce  
Punjab National Bank  
Punjab & Sindh Bank  
State Bank of India  
State Bank of Hyderabad  
Syndicate Bank  
State Bank of Travancore  
UCO Bank  
Union Bank of India  
United Bank of India  
Vijaya Bank  
IDBI Bank  
CITI Bank N.A  
Deutsche Bank AG  
The Hongkong and Shanghai Banking Corporation Ltd.  
Standard Chartered Bank  
J P Morgan  
Axis Bank  
The Federal Bank Limited  
HDFC Bank  
Kotak Mahindra Bank  
ICICI Bank  
Indusind Bank  
Yes Bank  
The Royal Bank of Scotland N.V. ceases to be BHEL Bankers w.e.f. 22.03.2016

## Registered Office

Regd. Office: BHEL House, Siri Fort,  
New Delhi-110 049 (India)  
CIN: L74899DL1964GOI004281  
Phone: 011-66337000  
Fax: 011-26493021  
Website: www.bhel.com  
E-mail: shareholderquery@bhel.in

## Auditors

Wahi & Gupta, New Delhi  
DSP & Associates, New Delhi  
SBA & Co., Bhopal  
V. Narayanan & Co., Trichy  
Rao Associates, Bengaluru  
Anjaneyulu & Co., Hyderabad  
J. V. Ramanujam & Co., Chennai  
M. B. Gabhawala & Co., Varanasi

## Cost Auditors

Jugal K Puri & Associates, New Delhi  
Sanjay Kasliwal & Associates, Bhopal  
Narasimha Murthy & Co., Hyderabad  
Vishwanath Bhat & Co., Bengaluru  
Sunil Singh & Co., Lucknow  
RKMS & Associates, Chennai  
Velamarthi & Associates, Visakhapatnam

## Cost Audit Report

Financial Year	Due date of filing Cost Audit Report	Actual date of filing Cost Audit Report
2014-15	27.09.2015 extended to 30.09.2015	29.09.2015
2015-16	27.09.2016	Will be filed on due date

## Share Transfer Agent

**M/s Karvy Computershare Private Ltd.**

UNIT: BHEL

**Delhi:** 105-108, Arunachal Building,  
19, Barakhamba Road,  
New Delhi – 110 001  
Tel. : 011-23324401, 43681700/01/02/21  
Fax: 011-23730743  
E-mail: ksblldelhi@karvy.com

**Hyderabad:** Karvy Selenium Tower B, Plot 31-32,  
Gachibowli, Financial District,  
Nanakramguda, Hyderabad-500032  
Tel.: 040-67162222  
Fax: 040-23001153  
Email: madhusudhan.ms@karvy.com;  
einward.ris@karvy.com

# NOTES

# Empowering the aerospace & defence!



BHEL is proud to be associated with the development of the Indian Light Combat Aircraft, now named 'Tejas'. BHEL has successfully developed compact & light-weight heat exchangers for LCA which perform the vital functions of maintaining the required environment for the pilot's cabin and prevent the hydraulic & lube oils in the aircraft from excessive heating during flight. All these compact heat exchangers have successfully passed the mandatory pre-flight qualification tests to prove their air-worthiness, and been accorded the 'type approval' by Centre for Military Air-Worthiness and Certification (CEMILAC), Bengaluru. BHEL has also supplied the ECS Test Rig installed at GTRE, Bengaluru used extensively for testing the thermal performance of these compact heat exchangers at ground level during their Qualification Test (QT) stage. In addition to this, BHEL also carried out developmental work for few other systems.

**BHEL is one of the select few firms worldwide with the capability to design and manufacture State-of-the-Art Heat Exchange equipment of International Quality for Military Aircraft.**



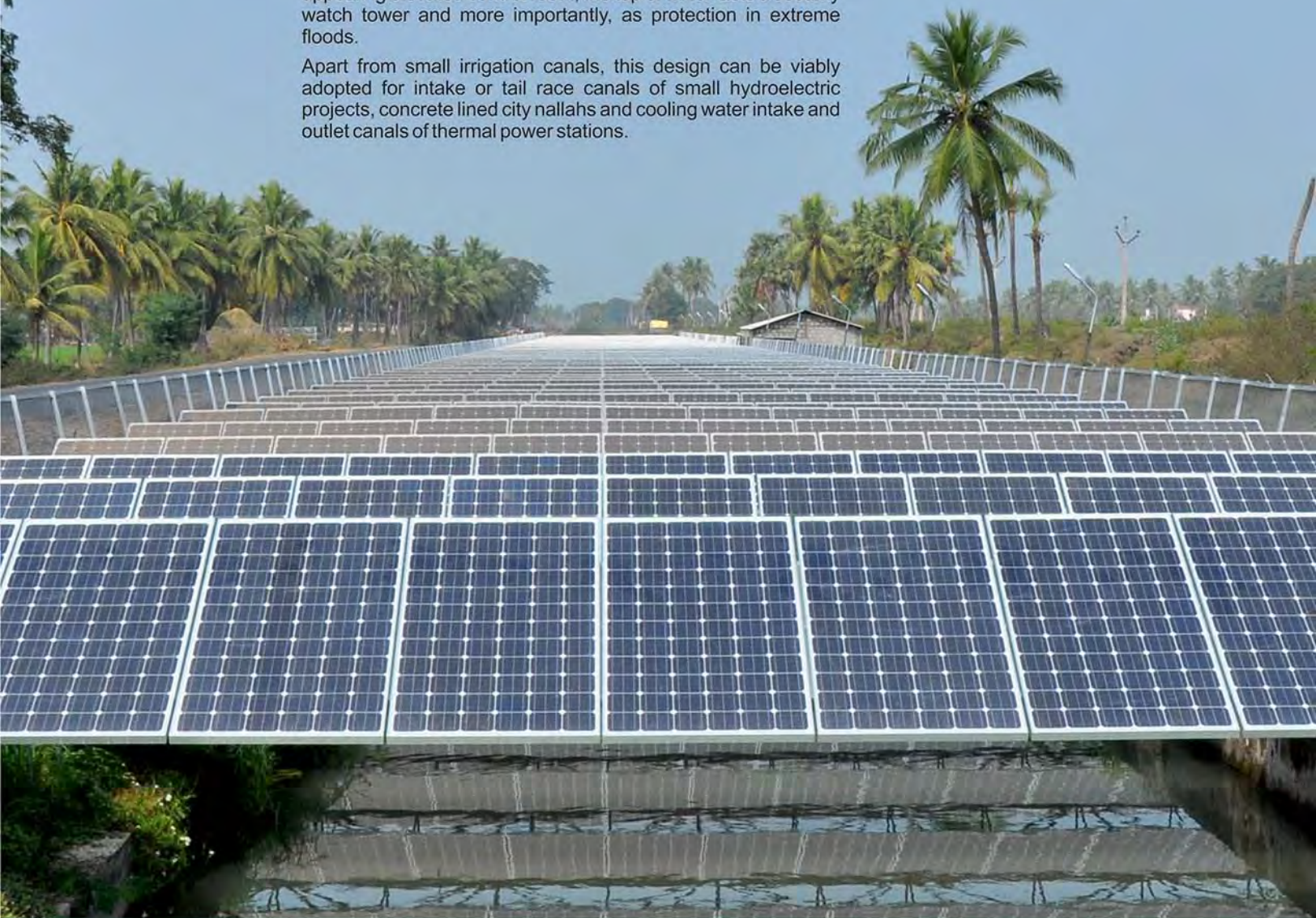


# Soaking up the Sun!

**BHEL** commissions India's first season-wise tiltable canal top solar PV plant at Bhimavaram in Andhra Pradesh. This value-engineered, patented design of BHEL makes optimum use of canal top space in powering the nearby irrigation pump sets and villages in the highly fertile area where premium agriculture land can't be spared for ground mounted solar power plant. Also, the tiltable design enables generation of more energy. Innovative concept of merging cable tray, walkway, fencing and illumination posts into the girder have reduced the civil works, thereby increasing the viability of this design.

Another unique feature of this project is the aesthetically appealing elevated control room, the top of which acts a security watch tower and more importantly, as protection in extreme floods.

Apart from small irrigation canals, this design can be viably adopted for intake or tail race canals of small hydroelectric projects, concrete lined city nallahs and cooling water intake and outlet canals of thermal power stations.



## Bharat Heavy Electricals Limited

Registered Office : BHEL House, Siri Fort, New Delhi - 110049, India

[www.bhel.com](http://www.bhel.com)

Corporate Identity Number : L74899DL1964GOI004281